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THE RAILWAY GAZETTE

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Higher Railway Charges Hearing

THE Transport Tribunal is to commence to hear the application of the British Transport Commission for higher freight and dock charges on January 4. Contrary to expectation when the decision to make the application was first announced, the Tribunal is to give the application a full hearing, and both railways and trading organisations will be represented by counsel. Details of the increases which it is proposed should be made were given in our December 2 issue. The principle of these changes is an advance of 16½ per cent. in rail freight and parcels traffic, merchandise and livestock by passenger train. The Transport Tribunal, although sitting as a consultative committee as required under the procedure laid down in the Transport Act, 1947, in effect will adopt much the same practice as the old Railway Rates Tribunal which it succeeded. Apprehension that the Tribunal might feel that all that was required of it was to rubber stamp the application passed to it, therefore has been dispelled. The Transport Tribunal occupies an important place in relation to both the British Transport Commission and the public and traders of the country. There is every reason why it should discharge its functions with care and deliberation, and there will be wide approval at the course it is to adopt.

Closing of Belfast & County Down Railway

Last week the Northern Ireland Transport Tribunal decided that the U.T.A. had made out a good case on "general financial grounds" for terminating the main-line services on the Belfast & County Down Railway. Therefore the Tribunal has decided to authorise the discontinuance of such services except on the line between Belfast and Bangor. Services will be withdrawn from the various sections by stages. This year, states the report, which is referred to elsewhere in this issue, there would be an overall deficit of £300,000 made up of an estimated loss of £120,000 and the interest on the present capital of £180,000, and, therefore, there was no alternative but for the Tribunal to grant the order unless it could be shown that there was some alternative way of reorganising the railway services. Statistics suggested that the main increase in road traffic in County Down since 1936 must be new traffic and that the recent serious deterioration in the financial position of the railway was due more to increased operating costs than loss of freight.

A Railway Traffic and Staff Comparison

Some interesting statistics were quoted by Mr. Fred G. Gurley, President of the Atchison, Topeka & Santa Fe Railway, U.S.A., in a recent address to the Associated Traffic Clubs in Houston, Texas. He was comparing traffic and personnel figures, to justify his claim that the American principle of railway operation under private enterprise is justified by its results. In this comparison, he included the Santa Fe, with 13,081 route-miles of line, the Japanese Government Railways, with 12,273 miles, and British railways, with 19,631 miles. Of freight traffic, according to the latest available figures, the three systems handle respectively 32,994, 13,059, and 21,457 million revenue ton-miles annually. Of revenue passenger-miles the corresponding totals are 2,300, 54,700, and 21,300 millions each year. Combining these two, by the ordinary American method of reckoning "traffic units" (freight ton-miles plus twice passenger-miles), the combined freight and passenger totals work out at 37,500 million units for the Santa Fe, 122,500 million for the Japanese Government Railways, and 64,000 million units for British Railways. Yet the total number of railway employees handling this traffic is 66,169 on the Santa Fe, 589,587 in Japan, and 648,740 in Great Britain. The last-named multiplies the Santa Fe personnel by nearly ten, for something like 70 per cent. more traffic units.

Overseas Railway Traffics

Traffics of the Antofagasta (Chili) & Bolivia Railway made a £17,400 advance over those for 1948 in the week ended December 4, though, in the following week, when there was a one-day holiday on the Chilean section, a £4,600 setback was recorded. For the fortnight traffics amounted to £130,560.

as compared with £117,760 last year, and the aggregate improvement is now £564,130, at £3,319,110 for the current 49 weeks. Increases of G24,448 and G42,124 in Paraguay Central traffics for the two weeks ending December 9 have brought the total improvement to G930,987 since July 1. Receipts for the fortnight were G312,469 and on the aggregate now amount to G3,318,854. Advances in South African Railways traffics for the weeks ending November 19 and 26 were not so extensive as in other recent weeks. During the first week receipts at £1,524,796 were up by £98,753 and in the second week were £62,984 higher at £1,489,097. Victorian Railways traffics were down by £155,378, at £1,220,311 for the month of August, the only increase in receipts being on road motor services, which were £1,452, as compared with £1,156 last year.

Athens-Salonika Line Reopened

On December 17, the King and Queen of the Hellenes boarded the first through train from Athens to Salonika since 1941. For the first time for eight years Greece is again linked with the Yugoslav railways and thus with the main European railway system. The 322-mile Piræus-Athens-Salonika line of the Hellenic State Railway was completely wrecked by the Germans and the guerilla warfare hampered subsequent reconstruction. Hundreds of men have been occupied during the last three years rebuilding the many destroyed bridges and clearing blocked tunnels. The ruling gradient is 1 in 50, which occurs in lengthy stretches. The principal viaducts occur in the Pass of Thermopylae and include the Asopos, Papadia and Gorgopotamos, set in impressive mountain scenery. Before the war the Athens portion of the "Simplon Orient Express," the principal train, covered the 364½ miles from the Yugoslav border at Guevghele to Athens in 13 hr. In this express and also twice daily each way between Athens and Salonika ran restaurant cars of the Wagons-Lits Company. Negotiations are expected soon between Greece and Yugoslavia on through services, but it had been decided at the recent International Timetable Conference that the "Simplon-Orient Express" should convey an Athens portion as from next summer.

Bopeep Tunnel, St. Leonards

Engineering works necessitating complete suspension of traffic are in progress in Bopeep Tunnel, St. Leonards, on the Southern Region main line from London to Hastings. The tunnel, which was opened in 1851, is ¼ mile long, and is driven through the Wadhurst Clay, a complex formation in which beds varying from clay to sandstone occur. Springs were struck when the construction shafts were sunk, and a considerable quantity of water drains into the tunnel, but until September last, the roof and side walls had given no serious trouble. Cracks then appeared in the brickwork, and an inward movement of the walls occurred, near the west portal. These defects developed suddenly, after an exceptionally dry summer, and appear to have resulted from the percolation of water, which has gradually weakened the ground and the material supporting the wall footings. For the time being, single line working was brought into operation, but it was decided to facilitate the repairs by closing the tunnel completely from November 27. The work of strengthening the defective walls with reinforced concrete inverts is described elsewhere in this issue.

Jubilee of The Railway Club

It would be difficult to ascertain when the well-informed amateur interest in railways first assumed substantial proportions, but clearly this stage had been reached by the 1890s, as such interest by then was sufficiently numerous and vocal to have justified launching *The Railway Magazine* in 1897, and forming the Railway Club in 1899. The latter body still thrives and celebrated its jubilee on Friday last. At the jubilee dinner, the chair was occupied by Mr. Kenneth Brown, the President, and 51 members and guests were present. The President said that an unincorporated members' club was essentially a British institution, and yet there could be no doubt that in surviving for half a century it had created an entity quite apart from its individual members. He considered

it more than a coincidence that the club had been founded two years after the first issue of *The Railway Magazine*, as that journal had crystallised the amateur interest in railways, and had maintained and informed it ever since; the members looked forward with great pleasure to the resumption of monthly publication, in the assurance that interest in railways was undiminished. The toast of the Officers and the Executive Committee was proposed by Mr. Charles E. Lee, Vice-President, and responded to by the Honorary Secretary, Mr. H. A. Vallance, who announced that he would not seek re-election next year on his completion of 19 years in office. The toast of the guests was given by the Honorary Treasurer, Mr. S. C. Hawtrey, and replied to by Mr. George Dow, Public Relations & Publicity Officer, London Midland Region, British Railways.

The Fickle Ganges

Mention has already been made in our Overseas columns of the proposals of the Indian Government to build another great bridge over the Ganges at Mokameh Ghat in Bihar Province, the site of an old-established wagon-ferry, connecting the eastern part of the metre-gauge Oudh & Tirhut Railway with the East Indian broad-gauge loop line to Calcutta. We now learn, however, that during the recent monsoon, the Ganges has played one of its frequent tricks and has eroded one of its banks to such an extent that its width at the bridge site is now about two miles. It may be remembered that in an article entitled "Unusual Railway Engineering Experience" in our issue of July 31, 1942, the vagaries of this river and the Brahmaputra River were described, and an instance was given where one of the rivers eroded its bank during the three monsoon months of one year to an extent of 6,000 ft., measured at right angles to its general course. One knows only too well what this entails if there is a main-line or a steamer-rail terminal on that bank. It seems probable that the Mokameh site for the bridge will now be abandoned in favour of another farther upstream, possibly near Patna, the provincial capital, where the banks are more stable.

Safe Shunting Speeds

Some important considerations bearing on the speed at which shunting may be performed without risk to the contents of wagons, emerged in an address given recently by Mr. John W. Barriger, President of the Chicago, Indianapolis & Louisville Railroad, to a meeting of railway officers in Chicago. Remark- ing that the force of impact varies according to the square of the speed, he said that while it was impossible to hold classes for shunters in the principles of physics and mechanics, if they could be persuaded to think in terms of the force of impact translated into terms of dropping the vehicle and its load from a height which would give a corresponding impact to the wagon and its load, they might tend towards more careful methods. In Mr. Barriger's experience, wagons in yards collide frequently at speeds of from 4 to 10 m.p.h., when the safe impact speed for wagon and load should not exceed 2 m.p.h. The fact that wagons appear to emerge unscathed, time and again, from impacts at higher speeds, causes these collisions, for such they are, to be regarded by shunters as commonplace, whereas wear-and-tear of wagons and drawgear, and potential damage to their contents, are increased considerably in this way. Careful shunting does not mean slow shunting, but it means intelligent and observant shunting, in which all those concerned work as a team. The ideal solution, of course, is found in the rail-brake equipment of the mechanised yards, but as yet these are relatively few in number. The substitution of diesel for steam power is another considerable factor in safe shunting.

Economies with High-Power Electric Locomotives

A Dutch engineer, Mr. J. W. Klaren, writing in *De Ingenieur*, has published some conclusions from his research into the power consumption economies possible by increasing the acceleration and maximum speed of electric locomotives. Given a train of 600 tonnes and a head wind of 15 km.p.h., he calculates that a 3,600-h.p. locomotive would require 377 kWh. in working it for 20 km. in 12 min. start to stop. With a 4,800-h.p. locomotive he shows that the consumption would be only 308 kWh., a

saving of 23 per cent. This advantage is calculated to increase as the distance is reduced, until a point is reached when the higher capital, maintenance, and depreciation costs of the more powerful locomotive are balanced by the saving in energy. Mr. Klaren emphasises the importance of acceleration in causing rapid attainment of a speed at which the kinetic energy of the train overcomes the various resistances to motion with the minimum wastage. Again, rapid attainment of high speed increases the distance the train can coast, during part of which time the resistances to motion save energy expended in braking. In a comparison of running on a 50-km. journey at the same average speed (100 km.p.h.), the energy saving with the more powerful locomotive is shown to be only $7\frac{1}{2}$ per cent., so the point at which the larger machine realises economies balancing its cost appears to lie in the region usually associated with multiple-unit operation.

* * *

New Principles for Merchandise Charges

DURING the debate in the House of Commons on December 1 on the first report of the British Transport Commission, the Minister of Transport stated that the principles on which the charges schemes under consideration would be based would be made available shortly to all trading bodies. These principles have now been made public by the British Transport Commission. They are contained in a pamphlet entitled "Principles Proposed to be Embodied in a Charges Scheme for Merchandise Traffic." They incorporate suggestions of far-reaching importance, which foreshadow a complete reorientation of charging practice in this country. The pamphlet is intended primarily for the information and convenience of trading bodies, and as a basis for discussions with them which the Commission wishes to undertake early in the New Year. The Traders' Co-ordinating Committee has already received copies of the pamphlet.

The principles which the Commission has set out are a new line of approach to a problem which is common to a majority of the transport systems of the world where rail and road compete. Elsewhere in this issue the outline of the principles and draft conditions of carriage are given in full, not only because of the importance which the present proposals have for the trading community of Great Britain, but also because of the wide interest which will attach to them among railway administrations in many parts of the world.

The draft principles cover all merchandise traffic conveyed by British Transport Commission services whether rail, road or canal, but they exclude for the present coal, coke, and patent fuel which will be dealt with later, probably in the same scheme. The endeavour of the Commission has been to find a classification, together with conditions of carriage, regulations and chargeable distances which as far as possible is common to all three services, but which, while not disallowing the trader freedom to choose the service he considers most suitable to his needs, encourages traffic towards the means of transport which can convey it most conveniently and economically. This principle of maximum uniformity in treatment for all forms of transport is the over-riding consideration, and is an entirely new departure.

The basis of the classification rates is the reverse of that which was adopted in the Railways Act, 1921, for as will be seen from the full details elsewhere, in determining the classification of individual commodities, loading capability comes first, and value last. In effect, the new classification will be a list of commodities, each of which will have a scale of charges based on the weight of the consignment. It is hoped in this way to eliminate many of the millions of exceptional rates now in operation on the railways, but the right to quote exceptional rates to meet exceptional circumstances will be retained. Agreed charges for the conveyance of all a trader's traffic also will be retained.

An entirely new feature of the proposals is the adoption of a system of chargeable distances capable of application by, and common to, all services. To avoid the necessity of calculating a vast number of distances, it is proposed to introduce a grouping system based on the national grid, adopted by the Ordnance Survey as a result of the Davidson Committee in 1938. Under this system the country is divided into ten kilometre squares, that is to say, squares having sides of approximately $6\frac{1}{4}$ miles.

The chargeable distance will be based on the measured mileage between a selected place near the centre of each group, using the shortest route by class A or B roads. The same chargeable distance will apply from any place in one group to any place in another. A gazetteer will be prepared showing a reference number of the group in which each city, town, village or hamlet is located for distance purposes. Very short distances will form the subject of separate consideration.

The foregoing is necessarily a survey of some of the chief points only of the principles which the Commission has put before traders for their observations. In general it will be clear that the Committee, under Sir William Wood, which has evolved the proposals, has moved a fair way from former railway practice towards that of road hauliers. It is worth noting that Great Britain is the only country in which the road haulage industry, so far as it is operated under the British Transport Commission, is subject to statutory control. The principles now put forward are a new line of approach to a very old problem which has become more and not less acute with the passage of the years.

From the viewpoint of traders, no doubt the chief concern will be what difference to his transport charges will be made by any new system. Of that the draft can give no guidance. Inherent in the scheme is the right of the Commission to forward traffic by any available means, unless specific instructions to the contrary are given by a consignor.

* * *

Mr. F. W. Hawksworth

THE distinction of having been the last of the notable line of Chief Mechanical Engineers of the Great Western Railway has fallen to the lot of Mr. F. W. Hawksworth, since January 1, 1948. Chief Mechanical Engineer of the Western Region, British Railways, who retires on December 31. Mr. Hawksworth, of whom a portrait and biography appear on another page, succeeded Mr. C. B. Collett, on his retirement, in 1941, thus becoming the sixth C.M.E. of the G.W.R. since Daniel Gooch assumed the office, as it was then known, of Locomotive Superintendent in 1837. Gooch was succeeded, as Locomotive & Carriage Superintendent, by Joseph Armstrong in 1864, William Dean, his successor, also holding that title, from 1877 to 1902. During the regime of G. J. Churchward (1902 to 1921) the designation was changed to Chief Mechanical Engineer. Mr. Collett and Mr. Hawksworth being the two subsequent holders of that title.

Mr. Hawksworth's departure from Swindon practically coincides with the arrival in this country of the first gas-turbine locomotive to be put into operation on British Railways. It is, perhaps, a strange commentary on present conditions that the C.M.E. who was responsible for visiting Switzerland some eighteen months before the present régime came into being, and who recommended the purchase of a gas-turbine locomotive, will not be in office to see the new prime mover make its initial trials on British tracks. The decision to try out a gas-turbine locomotive in England was taken by Sir James Milne (then General Manager, G.W.R.) and Mr. Hawksworth at a time when most of the then railway companies were thinking in terms of diesel-electric units as an alternative to steam power or straight electrification. Mr. Hawksworth has been closely in touch with the gas-turbine locomotive during its construction in Switzerland and has only recently returned from seeing it on trial in that country.

From the time when Mr. Hawksworth, after a period in the testing house at Swindon Locomotive Works, became a draughtsman in 1905, he was closely concerned with the design of the standard 2- and 4-cylinder engines throughout their development by Churchward; and he is the last officer still in active service at Swindon who was associated with that distinguished engineer. Mr. Hawksworth's whole career has been spent at Swindon, where his practical interest in local affairs has resulted in his being held in the highest esteem; for he has given a great deal of his time and energy in municipal service in addition to his directly railway work. He is particularly interested in educational matters, and is a member of the Swindon Education Committee and other bodies; he is also a Justice of the Peace for the borough. In addition, Mr. Hawksworth was for ten years a Member of Council of the Institution of Mechanical Engineers.

British Transport Commission Accounting

THE great size of many of the nationalised industries has called for a new approach to the accounting and financial problems involved. It will be recalled that when the British Transport Commission issued its first annual report and accounts last September it dealt at some length with this subject, and with the various changes which had been introduced as compared with the previous practice of the constituent undertakings. Mr. R. H. Wilson, Comptroller of the British Transport Commission, took "The accounting and financial structure of the British Transport Commission" as his subject when he addressed the Railway Students' Association on December 14. He examined the position from the point of view of the published accounts, the internal accountings, and the working of the financial administration.

With regard to the first of these he pointed out that the consolidated balance sheet issued by the Commission brought together the assets and liabilities of all the undertakings controlled, and that the largest item was £1,217,000,000, under the heading of capital liabilities. Although the Commission as an undertaking was of gigantic size, the structure and organisation were of greater importance. The undertaking was single, but it embraced a great combination of distinguishable units. Provided these units were each of manageable proportions, and reasonably related to the whole and to each other, the possible drawbacks of extreme size began to disappear. Over 99 per cent. of the capital assets were in the hands of the various Executives.

Under the capital structure of the Commission, the interest burden, unlike a dividend distribution, was definite and fixed. Consequently, when changes in charges were under consideration, the effect on the equity did not have to be taken into exact amount. If an increase were made which was rather too large, any resulting surplus automatically would be carried forward for the benefit of transport users in later years. If the increase was too small, the deficit, similarly, would be carried forward for recoupment from transport users. Another advantage of the fixed interest system of financing was its relative cheapness in terms of interest. On the other hand, there were no equity-holders available to bear capital losses in the event of the transport system becoming redundant in whole or in part. Because of this, any system of financing by fixed interest borrowings should be accompanied by some form of capital amortisation. The Commission was bound to write off over 90 years the whole of any capital liability created.

The principle followed by the Commission in its accounting for capital assets which had to undergo replacement, was to write in the new asset and write out the old. The basis differs from that generally used by the railways before nationalisation, and the reasons for making the change were set out in some detail in the report of the Commission for 1948. Mr. Wilson added a further point. He argued that so long as the accounting for capital assets was based on a philosophy which aimed at the maintenance of assets in perpetuity, this was bound to affect the thinking of the persons engaged in the undertaking, and they would tend to regard capital as something static. In modern times he felt that to keep up to date one might have to constantly be discarding plant and equipment which still had a considerable unexpired life physically, or which could be kept in service by efficient maintenance. It would be possible to keep our place in the modern world only if we learned to scrap freely so far as immediate physical and financial resources permitted. Our capital must be "turned over."

On the vexed question of depreciation *versus* renewal, Mr. Wilson claimed that there was often no difference between the two bases of provision. Only when price levels changed did any question arise. Few would argue when there had been a fall in prices that a lesser sum than the depreciation of the old asset should be provided. In cases where price levels had risen there were many who maintained that the increases in replacement cost ought to be provided in addition to the depreciation, and Mr. Wilson agreed that this was a tenable point of view, though there were many arguments the other way. From the practical viewpoint, he suggested that an important question was whether the user of transport should be asked to put on one side immediately the money required to meet the enhanced cost of replacement, or whether this

enhanced capital cost should be met in due course by borrowing as necessary.

In dealing with the working expenses of various services operated by the Commission Mr. Wilson pointed out that the first and most obvious variation was to be found in "maintenance of ways and structures." The proportion of total working cost of British Railways was 16 per cent., and of London Transport railways 19 per cent., easily the greatest of the various agencies. The road haulage and bus and coach services, by contrast, used the public roads and provided little in the way of terminal services. Even when vehicle duties were included their "track costs" were only about 4 per cent. Mr. Wilson, however, thought it would be wrong to suppose that the inequality of track costs was at the root of the differences between the working result of railways and of roads, and that the road-rail problem was due to causes far less obvious and much more difficult to deal with.

When dealing with central charges Mr. Wilson said that he could see no reason why a form of transport which was specially favoured by circumstances, temporary or permanent, should not yield rather more than the central charges which on any strictly logical basis could be allocated to it. As integration proceeded the argument would shift in some degree from forms of transport to areas of transport. What was important was not an exact accounting allocation of the central charges, but an accounting which would provide a reliable cross-section of the economics of each particular form or area of transport. He did not suggest that interest charges were unimportant, or that they should not be met. Also, it was useful to have some rough idea of their origin. In 1948, for example, it was not unreasonable to say that since British Railways worked about 70 per cent. of the book values of the capital assets, and also employed about 70 per cent. of the staff, and took about 70 per cent. of the gross receipts, the central charges might have expected a contribution from railways of about 70 per cent. This would have been about £35,000,000. In fact the net traffic receipts of British Railways had been about £26,000,000.

Mr. Wilson's paper was a very detailed survey of many aspects of the Commission's accounting and financial work. It will be a valuable document for study by a far wider public than the Railway Students' Association.

* * * *

Diesel Locomotive Productivity Team

THE Anglo-American Council on Productivity, reference to which was made in our September 3, 1948, and subsequent issues, is arranging for teams, each representing a British (or an American) industry, to visit U.S.A. (or Britain) to study and report on the production methods of the industry concerned on the other side of the Atlantic. Emphasis is on productivity rather than on design, and the terms of reference include costing, layout of plant, standardisation, training, wage-rates, incentives, and all aspects of personnel management.

Amongst the British teams to visit the U.S.A. is that of the diesel locomotive manufacturers under the auspices of the Locomotive Manufacturers' Association, which will sail on January 4, returning on February 23. In a tour of six weeks the team will make studies of some seven leading plants, including the Baldwin Locomotive Works and those of the American Locomotive Company and the Whitcomb Locomotive Company; it is intended also to visit the General Motors Corporation plant. The smaller plants will be studied as having characteristics more similar to those of British works.

In accordance with the policy of the Council on Productivity, the team has been chosen by a Joint Selection Committee embodying both employers' and trade union representatives, and is composed of representatives from the supervisory, technician, and workshop levels. It is formed on an industry basis. The Team Leader is Colonel I. A. Marriott, Managing Director of W. G. Bagnall Limited; the Secretary is Mr. A. R. Robertson, Personal Assistant to the Director of the Locomotive Manufacturers' Association; and the remaining twelve members, four each in the supervisory, technician, and workshop groups, comprise officials and other employees of the Vulcan Foundry Limited, the North British Locomotive Co. Ltd., Ruston & Hornsby Limited, the Brush Electrical Engineering Co. Ltd., and the Hunslet Engine Co. Ltd.

New Port on the Great Lakes

TOLEDO, Ohio, at the western end of Lake Erie, now claims to be the foremost coal and iron-ore port in the world. The map on page 731 of this issue certainly shows a remarkable network of railways centring on that city and port, which are favourably situated for forwarding coal from one or more of the great coalfields of the U.S.A. to the eastern seaboard via the Great Lakes and St. Lawrence river. Vessels carrying up to 18,000 tons of coal are used in this service. Before 1948, the New York Central and Baltimore & Ohio railways had separate docking facilities about seven miles up the Maumee river, which flows through the city, but the passage of vessels up and down the river was subject to frequent delays at the seven drawbridges, and traffic by this route is possible only during the seven or eight months it is free of ice.

Consequently, the two companies decided to pool their resources and construct a new port-terminal on the shore of Lake Erie, near the river mouth, through the agency of a jointly-owned subsidiary, the Lakefront Dock & Railroad Terminal Company. Briefly, the project included: the provision of three piers with berthing channels and a 37-acre manoeuvring basin, all dredged to take the largest vessels; the transfer from the old up-river terminals of two 1,200-ton coal-car dumpers, and the provision of a third new one weighing 1,600 tons, and a similar transfer of two 800-ton ore-unloaders; the erection of these five machines on the new piers; and the construction of grid yards capable of holding 5,400 cars, loaded and empty, to serve these machines. This equipment ensures the handling of 20,000,000 tons of coal and 4,500,000 tons of iron ore during the months of each year that the route is free of ice. The new port-terminal, which has taken the place of a swamp, recently was completed at a cost of some £4,625,000, as described in an article elsewhere in this issue.

The new works involved cover an area of 212 acres and extend over 2½ miles from Millard Avenue, Toledo, to Maumee Bay on the lake. The three piers, consisting of earth-filled steel sheet-piling bulkhead walls, 8,400 ft. in aggregate length, provide berths during the working months for nine vessels, each 500 to 650 ft. long, and mooring space in winter for 20.

The berthing channels were dredged to a depth of 25 ft. below mean low-water level, as was also the turning basin, which measures 2,200 ft. x 700 ft., and connects the berthing channels with the U.S. Government channel along the lake.

Another feature of interest in the construction of the formation for the grid yards is the method used in placing one million cu. yd. of fill in the swamp; the total volume of fill was about 1½ million cu. yd. Earth excavated from borrow pits was carried in lorries and scrapers from 1½ to 2½ miles and dumped, in the first instance, on solid ground beside the swamp. It was then pushed progressively into the swamp by bulldozers in layers 1-2 ft. thick. This squeezed the muck ahead of the bulldozers and deposited solid material in its place. The fill was so well consolidated as to need no sheepfoot rolling.

The coal- and ore-handling equipment is also of unusual interest. One coal car dumper functions on the eastern pier, and two others are back to back, one at each side of the central pier. The two ore-unloaders are "travellers" and can work anywhere in a 700-ft. length of the western pier. The dumpers are each founded on a concrete slab 13 ft. thick, carried on timber piles below water level, and each is capable of raising, discharging, and returning to the track a 70-ton coal car every min. The cars are fed to each dumper, first by 30-ton electric pushers running on narrow-gauge beside the standard-gauge tracks, and then are propelled up the steep hump to the dumper platform by a Barney mule, emerging from a pit beneath the standard-gauge track on its own central narrow-gauge track. Empty cars roll down the other side of the hump by gravity to the pierhead, where they run up a steep switch-back dead end like a runaway catch siding, stop, due to gravity, and then run back over spring points to another road, where their speed is controlled by a retarder, and so arrive eventually in the empties grid.

The ore-handling machines are of the Hulett type, the base of which is a travelling gantry running on two double-rail tracks, spaced about 70 ft. apart. These gantry tracks are mounted on 700-ft. long concrete walls 10 ft. high and with bases about 15 ft. wide, supported on timber piling below water level. Each machine can unload from a vessel and discharge

into cars 15 tons of ore a min. When four vessels are berthed at the same time, three to receive coal and one to discharge ore, upwards of 12,000 tons of coal and 1,800 tons of ore can be handled in an hour at the new port.

British Transport Commission Traffic Receipts

TRAFFIC receipts of the British Transport Commission for the four weeks to December 4 again showed a substantial fall as compared with the corresponding period last year. In total they were £29,798,000 against £31,007,000, a decline of £1,209,000. The falling off was not so great as in the previous period when a record decrease of £1,674,000 was recorded. Nevertheless, total gross traffic receipts for the 48 weeks of the year are now £8,427,000 below the similar figure for 1948.

Receipts from British Railways declined over the four weekly period by £1,144,000 compared with the like period for 1948. Passenger revenue was down by £670,000, and merchandise and livestock takings declined by £427,000. There was a falling off of £86,000 in revenue from the movement of minerals. Coal and coke traffic yielded £1,000 more than at this time last year, and parcels traffic by passenger train was up by £38,000. Road passenger transport other than in the London Transport area showed an increase of £22,000.

Within the London area all sections of traffic showed declines, and the total fall in traffic receipts by London Transport services was £97,000. Inland Waterways, on the other hand, registered an improvement of £10,000 wholly derived from freight charges.

	Four weeks to December 4		Incr. or decr.	Aggregate to December 4		Incr. or decr.
	1949	1948		1949	1948	
British Railways—	£000	£000	£000	£000	£000	£000
Passengers	6,240	6,910	— 670	105,640	113,985	— 8,345
Parcels, etc., by passenger train	2,288	2,250	38	26,773	27,017	— 244
Merchandise & livestock	6,550	6,977	427	75,644	78,346	— 2,702
Minerals	2,456	2,542	86	27,311	26,743	+ 568
Coal & coke	5,616	5,615	1	62,815	60,714	+ 2,101
	23,150	24,294	— 1,144	298,183	306,805	— 8,622
Road Passenger Transport, Provincial and Scottish—						
Buses, coaches & trolley-buses	2,291	2,269	22	32,817	32,098	+ 719
London Transport—						
Railways	1,109	1,148	— 39	13,236	13,456	— 220
Buses & coaches	2,306	2,344	— 38	29,012	29,204	— 192
Trolleybuses & trams	826	846	— 20	10,106	10,379	— 273
	4,241	4,338	— 97	52,354	53,039	— 685
Inland Waterways						
Tolls	54	54	—	628	640	— 12
Freight charges, etc.	62	52	+ 10	779	606	+ 173
	116	106	+ 10	1,407	1,246	+ 161
Total	29,798	31,007	— 1,209	384,761	393,188	— 8,427

For the 48 weeks of the year, railway revenue is down by £8,622,000, of which passenger takings have accounted for £8,345,000, and merchandise and livestock receipts for £2,702,000. Coal and coke revenue is higher by £2,101,000, and mineral traffic by £568,000. Parcels by passenger train brought in £244,000 less. Over the year there has been £719,000 more revenue from road passenger transport in the provinces and Scotland.

All sections of the London Transport show falls over the year, and in total are down by £685,000. Inland Waterways have improved their receipts by £161,000.

On a percentage basis the latest receipts give little reason for encouragement, for the passenger revenue for the four weeks to December 4 show a decline of 9.6 per cent., and for the 48 weeks of 7.3 per cent. Merchandise revenue has declined 6.1 per cent. over the latest period, and by 3.4 per cent. for the year so far. The decline in minerals is 3.3 per cent. and they now show an improvement of only 2.1 per cent. over the year. Coal traffic, which has been one of the best features of the returns, on this occasion shows only a nominal increase; the aggregate is up by 3.4 per cent. over the year. In total, the decline in railway traffic is 4.7 per cent. for the four weeks, compared with 2.8 per cent. for the 48 weeks.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The Late J. A. Kay: Proposed Memorial at Longmoor

2, Kensington Palace Gardens.

London, W.8. December 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—I feel sure that many friends of the late J. A. Kay will welcome the proposal put forward in your December 9 issue by the Longmoor Commandants and will agree that a plaque in the Garrison Church is the most suitable form of memorial.

It is to be hoped that it will be possible to provide a memorial worthy of a figure so outstanding in the world of railways.

Yours faithfully,

P. M. BROOKE-HITCHING

[Any contributions from readers of *The Railway Gazette* who wish to subscribe to the memorial may be addressed to The Editor, *The Railway Gazette*, 33, Tothill Street, S.W.1, and will be acknowledged before being remitted to Longmoor.—Ed., R.G.]

Out-of-Course Western Region Working

20, Sion Hill,

Bath. December 12

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Following on recent examples of out-of-course workings in your correspondence columns this item may be of interest.

Due to delays west of Bristol the 12 noon up express to Paddington arrived at Chippenham, where I joined it, 32 min. late. At Swindon we found that the 1.18 p.m. train from Cheltenham to Paddington had left, and for the benefit of many passengers who would otherwise have missed this connection to Reading it was announced that we were going to stop there specially. An excellent run was made, in 42 min. start to stop for 41.3 miles, and Reading was reached at 2.23 p.m., only 10 min. later than the normal arrival off the 1.18 p.m. ex Swindon.

For London passengers the regaining of lost time might have been spectacular, but for this stop, as the driver was clearly out to do his best, though naturally the arrangements made were in the interests of all, rather than a proportion of the passengers travelling from west of Swindon. The train continued to London in 37½ min. start-to-stop for the remaining 36 miles, and, despite the additional stop at Reading, seven min. were regained between Chippenham and Paddington. Granted that the timing is a fairly easy one, and that with a "King" class engine there was ample power for an eleven-coach train of 355 tons tare, the working nevertheless reflected credit on all concerned.

Yours faithfully,

O. S. NOCK

The Future of the Rural Branch Line

7, Princes Square,

London, W.2. October 29

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—I fear Mr. Barry, in his letter in your October 21 issue, has somewhat missed the point of my letter which was that to make local lines pay these two ideals should be aimed at: a regular and fast service at not more than two-hourly intervals, and the reduction of overheads to a minimum by cutting out station staff and doing away with expensive forms of signalling.

I am quite aware of the advantages and disadvantages of the various methods of single line working and still maintain that the majority of branch lines can be worked without electric staff or tablet. No system of signalling is immune from accidents due to the human element, and I have not found train despatching more conducive to mistakes than the more elaborate methods.

As to the possibility of the engine being at the wrong end of the line when wanted in emergency, surely the frequency with which this might occur is so infinitesimal that it can safely be ignored. The idea is really rather on a par with that of the old-fashioned railway officer who insisted on every train being allowed sufficient time at stations for handling rail traffic which might occur once in months or even years.

I entirely agree with Mr. Latham's remarks; the next step is presumably to prove by statistics that the train service doesn't

pay and so should be withdrawn—of course after the white-wash of a "local inquiry." I would also cite another Devon branch which had quite a reasonable traffic to the local market town although a rather unnecessary charge was involved. This year a regular interval bus service has been started but no improvement has occurred in the train service and so naturally the trains run almost empty. The end of this branch is close to a big works, many of whose workers would like to go home to their dinners but for as long as I can remember the service has made it just not possible by a few minutes for them to use the trains.

Yours faithfully,

H. L. HAWKER

Preservation of Narrow-Gauge Lines

22, Heatherfield Road, Marsh,

Huddersfield. November 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Recent disturbing news from the Tallylyn Railway prompts me to advance certain points towards the future of these fast disappearing but very attractive little lines.

Could the preservation and operation of such a line commend itself to the National Trust? Why not a new Trust devoting itself not only to scenic light railways, but all picturesque industrial antiquities from Showman's steam traction engines to Thames barges, and windmills to light railways? This Trust would draw together the wealth of interest there is in such matters and amass a fund for parallel work to the National Trust. At the very least steps should be taken to preserve a narrow-gauge steam locomotive in the York Museum before it is too late and they go the way of broad-gauge locomotives.

Yours faithfully,

WILLIAM B. STOCKS

1948 Locomotive Exchanges

29, Courtenay Park,

Newton Abbot. November 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Having read what has been published in *The Railway Gazette* regarding the locomotive exchange trials I am wholly unable to understand the epidemic of twisting and excuse making which is going on in an endeavour to make Mr. Bulleid's Pacifics of "Merchant Navy" and "West Country" types appear far better engines than is actually the case.

They are the heaviest engines on coal, oil, and maintenance that ever ran on our railways, besides being badly wanting in adhesion. As a practical man I would say that tests on a dry rail are very far from conclusive, and had one of these engines fallen below a certain speed in climbing such banks as Hemerdon, Rattery, Dainton, or the heavy banks of the old L.N.E.R. and L.M.S.R., on a really dirty rail such as is frequently encountered by the regular engines of the Regions concerned, they would never have got up at all without banking assistance.

A "Merchant Navy" or "West Country" can hardly start a train on a dry rail without slipping, and having stalled on a 1 in 42 or 1 in 39 rise, they would never get away again unassisted.

Speed stunts count for nothing on trials with dynamometer cars, and drivers are not asked to improve on schedules. Point-to-point timing has always been the understood proceeding, with such recovery of time lost through delays at stops and speed reductions as the driver can safely make without perceptibly increasing his coal and water figures.

Coal per train mile was always the figure until these last tests, and this is borne out strongly by Mr. Cecil J. Allen's book. I do not deny that coal per D.B.H.P. hr. is a better comparative figure, but it favours Mr. Bulleid's engines again.

One is tempted to wonder whether the S.R. authorities, knowing that their engines would not impress engineers or practical men by the heavy figures on coal, oil, and maintenance they would give, sought to show them off with a view of favourably impressing the less initiated, to whom figures mean little and an early arrival more, and their enginemasters were possibly instructed on these lines. It is a peculiar coincidence that the other competing drivers without any exception worked on what has always been accepted as test-run procedure.

The G.W.R. "King" was worked easily compared with what she could do, and the "Hall" likewise, and both these engines could have cut schedule easily and considerably if orders had been given to put on a stunt of this sort. So could the majority of the L.M.S.R. and L.N.E.R. engines, which were also worked lightly.

On the Welsh-coal additional tests of the Western Region "Kings" on November 24, Potter, with 6001, regained 19

min. and made three, arriving at Paddington at 1.42 instead of 1.45, and this between Newton Abbot and London. On December 15, Potter, with 6022, regained 22 min. and made one, arriving 1.44. On December 16, 6022 tackled the 5.30 down 41-hr. express with a load purposely increased to much above the tonnage usual for that train to Plymouth.

Unfortunately it had not been possible to give ample warning of the changed time of the test run, which had been scheduled for the 1.30, but in spite of many signal checks No. 6022 did magnificently, and all time lost was accounted for by signals and other delays, the engine's record being excellent. No S.R. engine would have done so well! It must be obvious that at a time when British Railways are being run at a loss, luxury speed schedules are beside the question.

Reasonable timing are the best that can be expected, and engines must be used that will keep time at a minimum cost in fuel, lubrication and maintenance. They should also fulfil such vital safety requirements as a clear view of signals from the footplate at all times and should not fling hot ash in showers on to the coaches and into the eyes of the passengers, or drop half the fire on to the track while running, and waste thousands of gallons of water by blowing off continuously. A good engine does not catch fire or explode, and it is not less efficient if it is beautiful to look at, which Mr. Bulleid's certainly are not.

The waste in using these engines on three- and four-coach trains which an old 4-4-0 could play with must be colossal, and we pay for it all! Let it be discontinued, and use these engines only where maximum power output is needed, and replace them with smaller engines of orthodox design.

Four-fifths of the late running of passenger trains today can be traced to control and to the signalmen, who seem to hang on to wartime ideas that passenger traffic can be delayed any time in favour of goods. Orders should be given to them that the road must be kept clear for all the main passenger service, and no chances must be taken of clearing freight and coal trains, crossing over bankers, etc.

Reports should be demanded from all signalmen as to delays caused to all fast trains. Far too often drivers are blamed by the uninitiated when these men are really the culprits. Fine runs are spoilt by avoidable and untimely stops for signals, or running for many miles against distant signals at reduced speed until a coal or freight train, sent away when it should have been kept back for the passenger, reaches the next refuge siding or turning loop of suitable length.

Regional design would beat standard design every time and give greater scope for development and more satisfaction to drivers and firemen, but a standard of efficiency and economy should be demanded, and in these respects all freak engines would be found wanting, and should be forbidden as wasteful and useless experiments.

Yours faithfully,

A. J. MAXWELL

Merits of the Railborne Vehicle

The Old Manor,

Salisbury, November 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—From Mr. Calvert's letter in your issue of November 11 one would think that there is a future for tramways and similar light railways. Where the track can be segregated, or at least given a separate "lane" such as on the Embankment and other wide roads, the two sets of traffic do not interfere with each other. Perhaps this condition is the minority; in most instances the roads are too narrow and where traffic is heavy the presence of trams is apt to make the confusion worse. Anything fouling the track by so much as an inch will hold up a tram and perhaps a good deal behind it. A trolleybus can manoeuvre a bit to one side or the other.

There are the old objections of damage to tyres, bad alignment of the top of rail and surface of road, wheels getting caught in the groove, bicycles being tripped up, and skids.

At one time narrow-gauge light railways were quite popular on the Continent, in Ireland, and to a lesser extent here, some of them quite extensive. Many have disappeared and the number is still declining.

In the past tramway undertakings seem to have lost a chance in not running a parcels service with special vans, and even light goods. One of the Paris markets was supplied by trains of standard wagons run over the normal tram lines in the early hours of the morning. I seem to remember, in the dim and distant past, goods being unloaded in Brussels from wagons in some of the quieter boulevards. Perhaps ours did so, but the facilities did not develop.

One would have thought that these lines would have been useful in linking up villages and smaller towns if the traffic

could be relied on. There would be the problem of getting the goods to and from the nearest point on the line; a lorry from door to door does the whole work in one. One has heard of tenders being accepted because delivery could be given two or three days before another firm although the material was going into store and would not be required for the immediate moment.

Passenger stopping places would be on much the same basis as the present bus stops. Farms, any works that there may be, and other large establishments, would be dealt with by having their own private sidings.

Yours faithfully,

COURTENAY BARRY

Suburban Coach Design

12, Fairholme Avenue,

Gidea Park, December 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—May I be granted space in your columns to correct a mis-statement in my letter to you published in your issue of December 2, to save you the necessity of publishing the flood of contradictory letters I expect you will receive.

I quoted a train interval of "twenty-five seconds plus station stop." This is a figure which, had I considered it carefully at the time of writing, I should have realised it impossible to attain—a fact which I have had pointed out to me in no uncertain manner by my colleagues. This figure would require rates of acceleration and deceleration of an average value of the order of 8 ft./sec./sec.

I make no excuse for the error, which is obviously due to a mistake by me, as figures since taken show that the interval ranges from 42 sec. to 53 sec., figures which by no stretch of the imagination could ever be misread as "twenty-five."

This error does not, however, affect my claim that the Metropolitan Railway ran a service of sixty trains an hour on one track, as this frequency was inaugurated as long ago as 1924, at the time of the opening of the Empire Exhibition at Wembley, access to which was available over only one track in each direction between Baker Street and Finchley Road and Aldgate.

Yours faithfully,

R. A. PASCALL

Closing of Wayside Stations

80, Longmead Avenue,

Bristol 7, December 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Further to my letter which appeared in the issue of November 18, I think the stations on the Paddington-South Wales main lines between Wootton Bassett and Stoke Gifford provide interesting examples. I am also more conversant with the local conditions governing these stations than with those governing the stations on the East Coast main line which I referred to in my previous letter.

Commencing at the Bristol end, Winterbourne, Coalpit Heath, and Chipping Sodbury could safely be dispensed with. The general trend of the traffic from all three stations is to or from Bristol, and the three trains each day between these points cannot expect to compete with the frequent bus service. The stations at Coalpit Heath and Chipping Sodbury, and particularly at the latter, which is one mile from the town, are very inconveniently situated. Continuing eastwards, Badminton Station is of a different class as it is served by certain of the South Wales expresses and is an important "railhead" for the surrounding district. The stations at Hullavington, Little Somerford, and Brinkworth seem to have a little more traffic than the stations further west. No doubt because the trend of the traffic is to or from Swindon and the bus services are not so frequent, but there again the service of three trains each way is too sparse to be useful for anything but parcels traffic.

Little Somerford is also the junction for the short branch to Malmesbury. This branch suffers because so few trains call at the junction. I think, therefore, the experiment of one or two South Wales expresses calling at Little Somerford would be worthwhile. This would put Malmesbury within just over two hours of London. Neighbouring branches such as Chippenham to Calne, Kemble to Tetbury, and Kemble to Cirencester do quite well because expresses call at their junctions, putting them within just over two hours of London, so why should not Malmesbury have the same privilege? If it cannot, it is possible that the last chapter in the chequered history of this branch line will be written.

Yours faithfully,

J. F. BURRELL

The Scrap Heap

DECORATED STATIONS

Staff of the London Midland Region of British Railways have decorated 15 principal stations, with gay displays of Christmas trees, streamers, balloons, bunting, holly, and evergreens. The stations concerned are Euston, St. Pancras, Liverpool (Lime Street), Sheffield, Preston, Blackpool (Central, and North), Manchester (Victoria, Exchange, London Road, and Central), Stoke, Leicester, Nottingham, and Carlisle.

100 YEARS AGO

From THE RAILWAY TIMES Dec. 22, 1849

ATMOSPHERIC and LOCOMOTIVE ENGINES for SALE.—Mr. STARLING is instructed by the Directors of the London and Brighton Railway Company to dispose of those highly-finished engines, by Messrs. Maudsley and Co., lately used on the Atmospheric Railway.

Mr. S. has also for disposal several New and Second-hand Six and Four-wheeled Locomotives.

Full particulars on application at his office, 13, Change-alley, London, November 14, 1842.

GIFT TRAVEL CERTIFICATES

A train trip anywhere and back, at any time, as a Christmas gift, is a new feature offered by the Pennsylvania Railroad service this year. The certificates are printed in Christmas colours, decorated with holly and including good wishes, and can provide any type of railway or Pullman ticket, as well as cash for incidental travelling expenses.

The price of the railway tickets, cost of Pullman accommodation if specified, and cash desired are paid when the gift certificate is bought from a ticket agent. He addresses the certificate to a ticket agent convenient to the recipient and the buyer then posts the certificate as a gift.

BRITISH RAILWAYS POSTERS

During the winter the Railway Executive is exhibiting at railway stations throughout Great Britain a series of posters depicting railway scenes and also the numerous ways in which British Railways are serving industry. Examples of these posters, which show track-laying in progress by night and a view of a locomotive

cab, are reproduced below. Both are the work of Terence Cuneo. Examples of other posters in this series, depicting British Railways in the service of the steel industry and shipbuilding, brick works, paper making, and so on, will be reproduced in future issues.

WHO PULLS THE CORD?

On an average the communication cord is pulled 200 times a year, though for some reason there has been a drop in mischievous hold-ups since the war. As you would expect, a fairly high proportion of these alarm calls are childish hoaxes, and one obnoxious young prig actually pulled the cord outside Leigh-on-Sea because he did not want to be late for school. The magistrate let him off and held him up as an example to other lads. I would have sent him to Borstal.

Women have been known to stop the "Cheltenham Flyer" just for a cup of tea, and two Oxford undergraduates on their way to Bristol pulled the cord and stopped the train at Bath so that they could get some mint sauce to go with their lamb.—*Ian Mackay in the "News Chronicle."*

DROUGHT-BREAKING BRIDGE

The new Chiromo railway bridge over the Shire River, Nyasaland, is nearing completion, and will be open to traffic early in 1950. The launching of the central span was a major engineering feat, a wonder to the crowds of Africans, Europeans, and Indians who had gathered to see it.

Africans from the neighbouring village had a special interest in it. Their old wise men, steeped in superstition, reminded them of the drought of 1921-22, while the original bridge was being built. The Europeans, they said, had shut off the rain to enable them to build the bridge.

The next serious drought, which had devastated their crops, was in 1948-49, while the new bridge was in progress. According to local belief, there would be no normal rain until the bridge was built. Now, at a most propitious time, at the beginning of the rains, the river was again spanned. The wise-acres nodded with satisfaction and passed

the remark that there would be good rains this year.

Some of the more enlightened scoffed; they knew that building a bridge had no connection with the weather. Their assurance was short-lived; just after lunch, the heavens opened and heavy rain drenched everyone.

ALL HOPE ABANDON —!

(Belgians are experimenting with telephone booths on trains—see our December 9 issue)

My son, pay no attention to the prattling of the sage.

Who never had experience of this progress-ridden age.

Let him scorn the life monastic and the joys of solitude.

We prefer a desert island, where no telephones intrude.

For we dwell amidst alarms, we're beset on every side,

But a railway carriage, surely, should be sacrosanctified;

Yet the Belgians have some mis-begotten notion of their own

For invading man's last stronghold with a tinny telephone.

Alarmed, I plead my brethren's cause in these few poignant verses;

What could be more evocative of Anglo-Saxon curses

Than to wrestle with a caller introduced by Mr. Trunk,

As you rattle swiftly westward o'er the points at Sidmouth June?

When you gleefully imagine you have slipped the boss at last,

And you settle down to slumber as the stations slither past.

How annoying, when you're drifting through some heaven of your own,

To be hustled back to business by a fretful telephone!

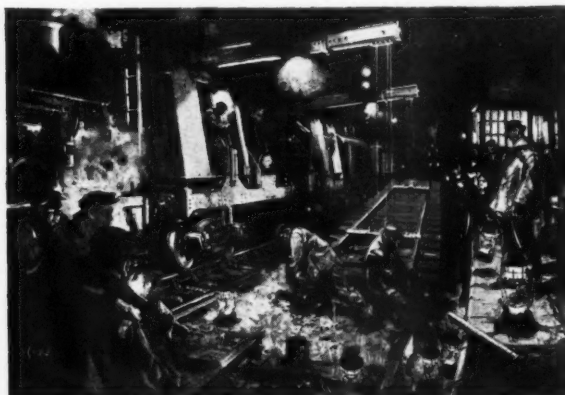
It may be nice, of course, to know, when running into Dover,

That the cat at last has kitted, and the milk is boiling over;

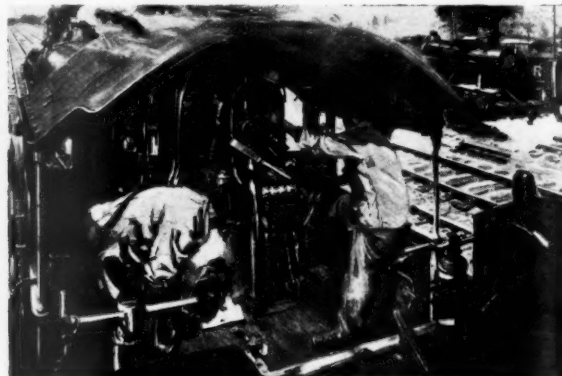
But, if we're to be tormented by a telephone en train,

I suggest we scrub out progress and start living once again!

A. B.



TRACK LAYING BY NIGHT



CLEAR ROAD AHEAD

The posters reproduced above represent two of a new series now being shown by the Railway Executive at stations in all parts of the country (see paragraph above)

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Railway Finances

During August the operation of the railways and subsidiary services resulted in a deficit of £126,698. Revenue, which was influenced by improved receipts from goods, coal and livestock traffic, amounted to £8,454,744, and expenditure totalled £8,581,442, due mainly to increased maintenance and operating costs and additional cost-of-living allowance payments. The accumulated deficit at the end of the first five months of the financial year was £1,478,410, or £544,845 greater than last year.

Taken individually for the months April to August of this year, the various services reflect the following figures: railways, a deficit of £2,082,572; harbours, a surplus of £1,121,525; steamships, a deficit of £17,870; and airways, a deficit of £93,773. The total deficit shown above for the five months includes appropriations to net revenue account of £402,830.

BURMA

Commercial Developments

Revised fares and freight rates were brought into force on October 1. Ticket checks by travelling ticket examiners and special squads on the Rangoon suburban and Wanetchaung passenger special trains have been successful. The Ava ferry was reopened on September 19 for passenger, parcels, luggage, mails, and smalls traffic.

Rolling Stock Construction and Repairs

Thirty-eight passenger and 121 goods vehicles have been repaired in recent months at the carriage and wagon shops at Rangoon, Mahlaigon, and Myitnge. As it was impossible to send the underframes and other components of the 200 coaches received from India to Myitnge shops, it was decided to erect the body shells at Rangoon shed. As an experiment, 12-ton vacuum-fitted wagons are being erected at Insein and at Rangoon.

Extended Train Services

The main-line train service between Thazi and Yamethin was extended south to Tatkon from September 5. The Thazi-Meiktila services were extended to Myingyan from September 14. The Myitkyina-Shwebo line was re-opened on September 9. The train service operating between Tharrawaddy and Tharraway with effect from September 1 was extended to Ngapugale from September 12.

Effects of Civil Unrest

Train services between Hsipaw and Lashio were cancelled on August 29 because of the occupation of Lashio by the insurgents. After the re-occupation by the Government forces normal services were resumed between Hsipaw and Lashio from September 7. The Thanbyuzayat-Karokpi service ceased from September 3 after derailment of a military special between Thanbyuzayat and Pa-Nga.

To conserve the coal stocks at Pegu, arrangements were made with the military to run only one train each way between Pegu and Tawa with effect from September 8. Shortage of coal at Thazi made it necessary to keep train services on the Thazi-Myingyan, Thazi-Shwenyaung, and Thazi-Mandalay sections to a minimum, as it was impossible to send coal to Thazi. Much bridge work has consisted of temporary repair of damage

caused by insurgents at Gokteik Viaduct; although much progress was made in the erection and repair of trestles, these would have been completed but for interruption through civil unrest of the supply of steel sections.

SOUTH AUSTRALIA

New Sleeping Cars to be Named

Aboriginal names are to be given to the six new sleeping cars being built at Islington Workshops, for the "Overland" express between Adelaide and Melbourne, operated jointly by the South Australian and Victorian railways.

Three will bear South Australian names, *Allambi* (quiet place), *Tantini* (sleeping), and *Mururi* (to sleep), from the language of the Lower Murray natives, and the other three, Victorian names, *Chalaki* (evening), *Weroni* (quiet), and *Dorai* (to sleep), from words used by the aborigines who lived in the north-west of Victoria, between Ballarat and the South Australian border.

The cars, which are air-conditioned, are expected to be completed by the end of the year. They comprise four cars with single-berth roomettes and two with double-berth compartments.

Each roomette has a wash basin and a lavatory of the combolet unit type. In the single-berth roomette the bed folds into a partition behind the seat. The double-berth type has a private shower compartment and a combolet.

CANADA

Purchase of Temiscouata Railway

The Government has passed a Bill providing for the purchase by the Government for \$480,000 of the 113-mile Temiscouata Railway from Riviere du Loup (Quebec) to Edmundston and Connors (New Brunswick).

Demand for Road-Rail Co-ordination

Co-ordination of all forms of land transport in Canada is urged by the Railway Association of Canada in a brief submitted to the Royal Commission on Transportation. The association, representing nearly all steam-operated railways, also proposed that highway transport pay a greater share of the cost of building the roads which it uses, and demanded uniform regulation and control of highway transport, which competes unfairly with the railways, because it is subsidised through highway construction; a study of the costs of a highway system chargeable to its users; and proper distribution of these costs among the various classes of motor vehicles.

Co-operation between the Dominion and Provincial Governments in the regulation of highway services was also proposed on the ground that the railways face a serious threat to their future in highway transport that produces "wasteful and uneconomic" competition. Continuance of the present situation might well lead to a breakdown of the entire transport system of Canada. The Dominion Government should set up machinery to regulate international and inter-provincial highway transport. The provinces would continue to control highway transport within their borders, but a supreme tribunal to include representatives of both the Dominion and the provinces would hear appeals from federal and provincial bodies. The proposal covers not only

hauliers, but also privately-owned vehicles, which compete with both the railways and the highway carriers.

The Railway Association contended that road transport undertakings were skimming the cream of the traffic, whilst the railways had in the national interest to keep their rates low for lower-priced commodities. It was calculated that of Canadian highway transport undertakings' annual revenue of \$212,000,000, one half was derived from long-distance haulage beyond their normal economic radius. In addition, the railways lost another \$50,000,000 a year through being forced to lower freight rates in competition with road transport.

UNITED STATES

"En Route" Train Information on the New Haven

The New York, New Haven & Hartford Railroad has inaugurated an *en route* travel service on its "Yankee Clipper" and "Merchants Limited" trains, given by the hostess-telephone attendants on the two trains. It also enables passengers to secure Pullman reservations on connecting railways while travelling between Boston and New York, and *vice versa*. The attendants have taken a special training course enabling them to give any information regarding train timings, fares, reservations, etc., anywhere in the country.

SWITZERLAND

Bernina Line Partly Realigned

Part of the highest section of the metre-gauge Bernina line, near Bernina Hospice Station at an altitude of 7,403 ft., has always been liable to heavy snowdrifts. Erection of protective structures was impracticable and it was decided to realign the section. This work was completed in November. The realignment entailed the building of two embankments, and a metal bridge 147 ft. 7½ in. long.

Near Alp Grüm Station, eight miles from Bernina Hospice, and 6,858½ ft. high, along the slopes of the Piz Palü mountain, two snow protection walls, 488½ ft. and 1,138 ft. long, have been erected, one at each end of the loop tunnel which carries the line through the mountainside, to prevent interruption of the traffic as a result of accumulation of snow. Including these two, snow protection structures along the Bernina line in the Piz Palü region, roughly from Bernina Suot Station (23 miles south of St. Moritz, and at an altitude of 6,721 ft.) to Alp Grüm Station (42½ miles from St. Moritz) total 2,752 ft.

Reconstruction of Lauterbrunnen-Mürren Line

The Lauterbrunnen-Mürren line, owned and worked by the Bernese Oberland Railways, belongs to the oldest mountain railways in Switzerland. It consists of an electric funicular, 3,992 ft. long, connecting Lauterbrunnen with Grüttschalp, and a metre-gauge electric line from Grüttschalp to Mürren, 3¼ miles long. Both sections have undergone extensive reconstruction and modernisation in recent months, as their track and equipment, dating from the opening year, 1891, did not allow any increase in the traffic.

The work necessitated discontinuance of traffic for several weeks, but the services on both sections were resumed on December 1, in time for the winter sports season. The reconstruction of the funicular section cost fr. 900,000, and included the installation of a modern gear

plant at Grüttschalp funicular station, the replacement of the old wire rope by a new steel wire rope, 5,248 ft. long, and weighing about 100 tonnes, and laying of modern rails.

The old funicular cars were replaced by two modern cars, each accommodating 62 passengers, and a goods trailer has also been provided. The altitudes of both termini of the funicular are 2,614 ft. and 4,877 ft. respectively and it will be possible to make the trip in eleven instead of 15 min. The altitude of Mürren Station is 5,376 ft.

The modernisation programme is to be resumed after the winter season, when two mechanical goods and luggage handling plants will be installed at Lauterbrunnen and Grüttschalp for the transfer of through consignments from and to the Lauterbrunnen terminus of the line from Interlaken, and at Grüttschalp in connection with the Mürren railway. This and other plant and equipment will entail a further expenditure of more than fr. 1,000,000. The completion of the whole programme is envisaged for the late autumn of 1950.

FRANCE

Seating Accommodation in Trains

The S.N.C.F. maintains that it is not bound to provide seating accommodation for all passengers in crowded trains, due to the shortage of coaches caused by the war. This is based on Article 74 of a decree dated March 22, 1942. Passengers who change to a higher class because the lower class is crowded must pay the difference in fare, whether they are seated or standing. Furthermore, any passenger changing to a higher class must also pay a charge in addition to the difference in

fare, unless he has previously informed the ticket inspector of his intention.

S.N.C.F. Equipment Plan

M. Jean Monnet, General Commissioner of the Modernisation & Equipment Plan, recently told the Finance Committee of the National Assembly that the credits required in 1950 would not exceed those of 1949, and pointed out that the plan is not financed by taxes, but by American aid and by the loan to be floated early in 1950. Three S.N.C.F. programmes provide for reconstitution of material, electrification, and permanent installations.

Permanent Installations

From the beginning of 1946 to the end of 1949, the total expended will be fr. 93,000 million, including fr. 70,000 million for reconstruction work.

GERMANY

Brown-Coal Burning for Locomotives

A recent message from Eastern Germany quoted an order issued by the Russian railway authorities at Berlin according to which 800 locomotives are to be converted to brown-coal burning by July 1 next. There is a wealth of brown-coal deposits in various regions of Eastern Germany, especially in Saxony and further east.

Reduction of Railway-Operated Inter-Zonal Bus Services

As the result partly of the re-introduction of passenger train services between Western and Eastern Germany, as recorded in our December 9 issue, various inter-zonal bus services operated by the German Federal Railways have been dis-

continued since December 1. No services are being operated on the Berlin-Hamburg route and those remaining on the Berlin-Frankfurt and Berlin-Munich routes do not operate daily.

Accident Compensation Rejected

An announcement recently made by the general management of the Federal Railways in Western Germany emphasised that the railways cannot be held responsible for compensation in respect of passengers holding a through ticket from a West German station to an East German station and who meet with an accident on the railways within East German territory.

U.S.S.R.

Railway Industry Output and Productivity

According to a recent report from Belgrade the combined output of the wagon-building works in the Soviet Union is estimated to total 43,000 wagons in 1949. This includes a proportion of 60-tonne wagons. The Leningrad wagon works has in hand a number of all-metal sleeping cars to designs evolved by Soviet engineers.

It has been stated that the recent introduction of the conveyor-belt system and of other rationalising measures at the Kolomna locomotive works has been responsible for a substantial increase in productivity. For example, the 36,000 man-hours formerly necessary for the completion of a steam locomotive has been reduced to 18,000 man-hours after the introduction of the improvements. It is believed that the adoption of additional mechanisation and rationalisation now under way will enable a further reduction to 10,000 man-hours to be attained.

Publications Received

The Steam Locomotive in Traffic. By E. A. Phillipson. London: The Locomotive Publishing Company, 88, Horseferry Road, Westminster, S.W.1. 8½ in. x 5½ in. 252 pp. Illustrated. Price 17s. 6d.—This book deals with a diversity of subjects, including departmental organisation, layout of running sheds, engine failures, and storekeeping methods. Each of these subjects is dealt with in detail, with information which should prove of considerable assistance to those faced with the difficulties arising in locomotive running. The author, who has had considerable experience of railway operating both at home and overseas, points out that basic principles of the efficient use of motive power are universal, and, while they change with the march of progress, only their application is varied to suit local conditions. Various aspects of the more important functions of a running headquarters are reviewed in some detail, including allocation of locomotives, analysis of engine failures, organisation of repair and maintenance work, and the distribution and control of stores. Also included are typical staffing arrangements of a running headquarters and engine depots in the form of a "family tree." Detailed attention has been paid to the organisation necessary for daily repair and maintenance in running sheds, which the author has classified under separate headings covering periodical repairs and repairs arising from engine failures, and which includes the various types of forms proposed for the rostering of staff, recording the movement of engines, and methods adopted for inspecting the dif-

ferent parts of the engine on a periodic basis. He points out that the inspection of the various engine details do not coincide, but are based on different mileages. This book, which should be of considerable practical assistance to those whose duty it is to supply motive power, contains a number of plates and diagrams of coal handling and boiler washout plant, some of which are in use on British Railways.

Mitit Carbide Tips and Tools.—Firth Brown Tools Limited has issued an illustrated handbook on Mitit and its applications. Mitit is described as consisting of intensely hard, fine, carbide particles cemented together in a soft, tough alloy. Its applications are in cutting tools, heading dies, gauges, boring bits, etc., and in wearing parts of machine components. The handbook includes definitions of terms used in turning and similar operations, and sections devoted to the design and use of Mitit tools, their manufacture, and the grinding of tools. There are some useful coloured diagrams.

Handling, Storing, and Transporting Aluminium and Its Alloys.—The Aluminium Development Association has issued its Information Bulletin No. 15, which is a revised edition of No. 1 of this series. The subject has been treated so as to broaden its application to the many and varied uses of aluminium. After a description of the characteristics of the materials in handling, storing, or transport, these subjects are treated in turn. There is a section on methods of protection such as by greases and oils, strip lacquers, and painting. Brief concluding paragraphs deal with identification of stock

(since aluminium and its alloys all have a similar appearance) and with segregation of scrap to take full advantage of the high recovery value of aluminium base materials of specified composition.

Wiggin Nickel Alloys.—Henry Wiggin & Co. Ltd. has published an illustrated brochure describing some of its products. The applications are discussed of Monel and Inconel in apparatus used in catering, laundering, dyeing, and other widely different machines, as also in the manufacture of motorcars.

Red Fox Electrical Resistance Alloys.—A brochure has been published by the United Steel Cos. Ltd., Sheffield, prepared by a subsidiary company, Samuel Fox & Co. Ltd., giving the characteristics and properties of electrical resistance alloys. This brochure, which is illustrated by tables, and so on, should be of great value to designers and manufacturers of electrical equipment.

Expanding Reamers and Small Tools.—An improved Vickers patent machine reamer with instant micrometer adjustment has been produced by the English Steel Corporation Limited, Manchester, and a recently published brochure illustrates the uses to which this reamer can be put. Adjustment can be carried out without removing the reamer from the machine, and the blades are made of 22 per cent. tungsten steel; the body is supplied in Morse taper sizes, Nos. 2, 3, and 4. The brochure contains a list of reamer sizes and current prices. A separate illustrated price list of small tools has also been published by the firm.

New Great Lakes Coal and Iron-Ore Port—1

The engineering works involved in the construction of a port-terminal designed to handle 20,000,000 tons of coal and 4,500,000 tons of ore in about seven months of each year

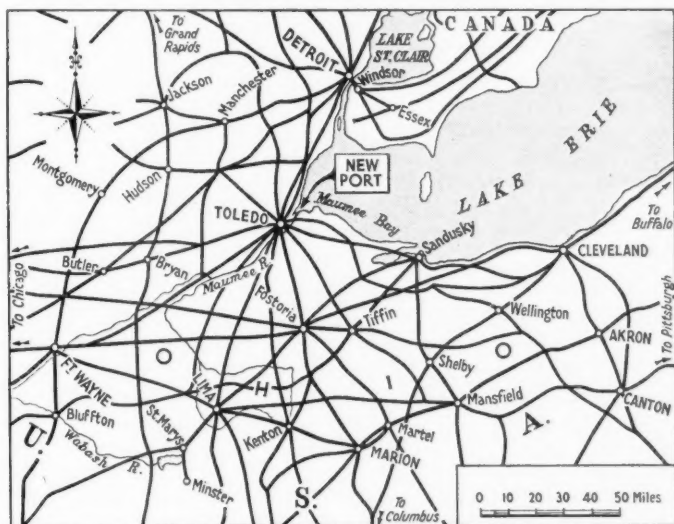
FOR reasons explained in an editorial on page 725, the New York Central and Baltimore & Ohio railways recently have constructed a new coal and iron-ore port on Lake Erie, just outside the great rail centre of Toledo. It has cost some \$4,625,000 in spite of most of the larger equipment being second-hand, and is capable of handling 20,000,000 tons of coal outwards, and 4,500,000 tons of iron-ore inwards, during the seven, or eight months that the St. Lawrence route is free of ice and open for traffic.

The new port-terminal covers an area of 212 acres and is more than 2½ miles in overall length. To enable the full-capacity output of the mechanical loading and unloading equipment to be sustained, namely, at the rate of up to 12,000 tons of coal shipped and 1,800 tons of

ft. deep, so that the mud was forced forwards and replaced by solid material. Test holes showed that the constant traffic of bulldozers, heavy lorries, large semi-trailers and scrapers over the fill had so effectively consolidated it that rolling with sheepfoot rollers was unnecessary. On an average, about 14,000 cu. yd. of consolidated fill were placed in a 10-hr. working day. Little bridging was required, the largest culvert measuring 6 ft. \times 10 ft. and 700 ft. long, but some 27,000 lin. ft. of oil pipe lines belonging to nine oil companies had to be relocated.

Design of Piers

The three parallel piers extending northwards into the lake and carrying the car-dumping and ore-handling machines are of the solid type, and consist of Z-section



Network of railways centering on Toledo

iron ore discharged an hour, it was necessary to provide grid yards capable of holding 5,400 wagons, many of them of 70-ton capacity. The layout is shown in one of the accompanying diagrams, and the earthwork required in the form of fill amounted to about 1,750,000 cu. yd., of which some 1,000,000 cu. yd. went into a swamp. Though large quantities of material had to be dredged from the lake bed to form a manoeuvring basin and berthing channels 25 ft. deep, it was decided that the use of this dredged material for the embankments would have necessitated hydraulic dredging and pumping into a settling basin, with much loss of time.

Method of Reclaiming Swamp

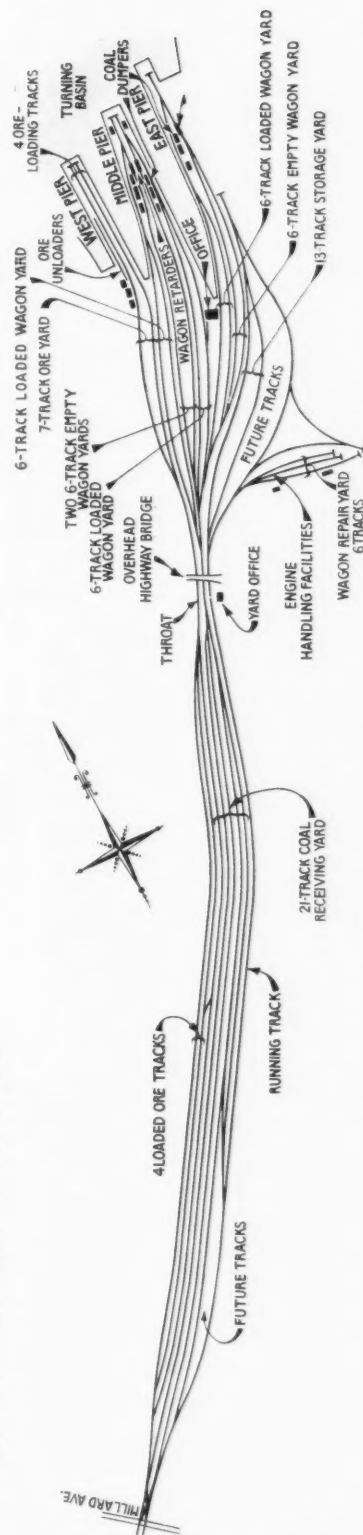
As an alternative, therefore, ten shovels and draglines of from $\frac{1}{2}$ - to 2-yd. capacity were set to work to excavate great borrow-pits and load about 70 big lorries and 8 scrapers. These machines carried the earth distances of from $1\frac{1}{2}$ to 2 miles, as required. For reclaiming the swamp, they dumped the earth, not into it, but on firm ground beside it. The soil then was pushed progressively into the swamp, by bulldozers, in layers from 1 ft. to 2

steel sheet-piling bulkhead walls back-filled with earth. The aggregate length of this walling is 8,400 ft., or over 1½ miles, sufficient to provide berthing for nine lake steamers 500 ft.-650 ft. long—four loading, or discharging, and five waiting to take their places—in the summer months, and mooring for about 20 vessels in winter.

Each sheet pile had a length of 55 ft., a depth of 12 in., and an effective width between interlocks of 18 in.; the weight is 38 lb. per sq. ft. of wall, or 57 lb. per lin. ft. of pile. All piles were driven to a depth of 19 ft. below the dredged level, which is 25 ft. below mean low-water level, and the piling was cut off 11 ft. above water level. Three diesel pile-drivers were used, and the average rate of progress in eight hours was 35 piles, the maximum being 50. Welded double-channel walling was bolted to the back of the piling and continuous horizontal timber fenders to the outer face.

Abnormally Long Tie-Rods

At 6-ft. intervals the walling is tied back with 2½-in. dia. tie-rods, except at the rounded corners of the piers, where 3½-in. rods were used. In plan, the piers



Layout of the yards, piers, and other facilities at the new port-terminal

taper slightly, so that the inshore widths are greater than those at the pierheads. Throughout their outer portions, where the width is 267 ft., or less, the tie-rods extend right across the pier from wall to wall. Where the width exceeds this figure, the rods are anchored about 70 ft. behind the piling to concrete walls supported by vertical and battered timber piles. The tie-rods are fitted with turnbuckle joints,

each weighed 1,200 tons. The weight of each of the two ore-unloading machines—similarly brought from the up-river B. & O. R.R. terminal—including its gantry and operating machinery, is 800 tons; both were erected on 700-ft. runways extending along the western pier. The method of operation and capacities of these five machines will be discussed later in this article, but meanwhile, it is of interest to

required. Proceeding from the city towards the lake, the first yard encountered consists of a 3,500-wagon receiving and despatching grid, which has 21 roads, each holding 150 coal wagons, four longer roads for loaded ore wagons, and a side running road, the whole converging on a four-track neck, or throat, beyond. Here, as in the case of the other yards, space has been allowed for future expansion.

From the throat a locomotive- and wagon-servicing yard, with turning triangle, takes off to the right. The throat leads onwards to seven smaller grids for regulating the flow of wagons to and from the five coal- and ore-handling machines. From left (or west) to right, they are: a seven-road ore-wagon grid leading to the four ore-wagon tracks that run out on to the western pier and are straddled by the gantries of the unloaders, which discharge into the wagons on them; two six-road loaded-coal-wagon grids, one serving each of the dumpers, one on each side of the central pier; a corresponding double six-road empty-wagon grid between the loaded coal-wagon grids, fed by gravity from two dead-end switchback roads on trestling at the pierhead beyond the dumpers; similar empty- and loaded-wagon grids serving the third dumper on the eastern pier; and a 13-road storage grid. These smaller grids together accommodate well over 2,000 wagons, and on them with their electric pushers and Barney mules depends the steady flow of vehicles to and from the machines, making possible the handling of up to 12,000 tons of coal and 1,800 tons of ore an hr.

Permanent Way and Buildings

The track throughout consists of selected second-hand 127-lb. rails laid on new treated sleepers, and there are 222 sets of points and crossings, all new and mostly with manganese frogs. To speed-up laying, the sleepers were delivered strapped together in bundles of 40 to 50, made up at the treating plant and handled by crane on the job. The track was laid

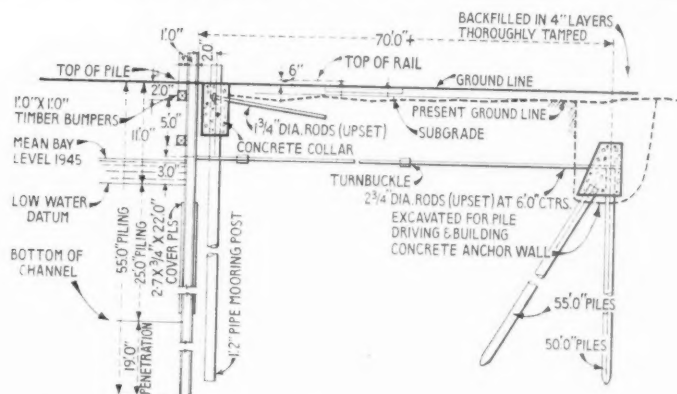


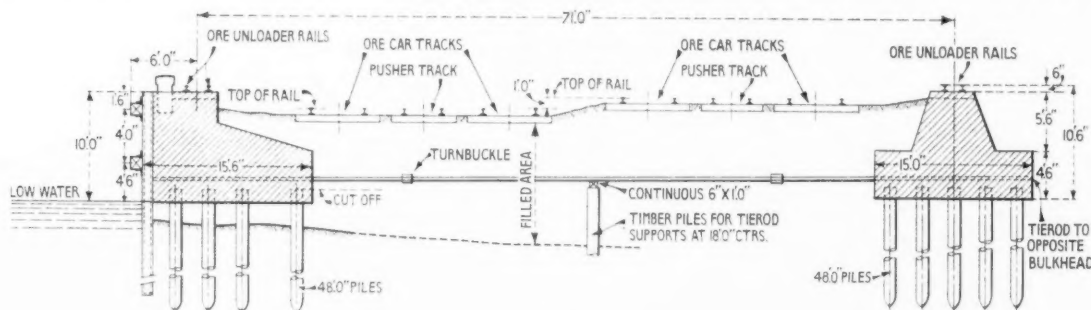
Diagram showing method of anchoring sheet-piling wall of wide portion of a pier

and those above original ground level were supported every 30 ft.-40 ft. on wooden joists carried by timber piles 18 ft. apart. Those below ground level rest on wooden blocks in trenches back-filled with sand to provide greater stability than a clay fill. The whole space behind the walling was filled with fine clay.

To secure a 25-ft. depth of water at mean low-water level alongside the piers, in their approaches, and throughout the 37-acre manoeuvring basin—measuring about 2,200 ft. x 700 ft.—connecting with the Government navigation channel in the

note that, collectively, they required for their support some 10,000 timber piles, each 40 ft.-50 ft. long and capable of carrying a load of 18 tons.

The three wagon-dumpers and their three substations, being fixtures, rest on slabs of concrete 13 ft. thick and carried down to just below low-water level. These slabs are founded on a total of over 2,100 piles, the heads of which were cut off just above mean low-water level, but the pile tops are embedded in the slabs and are not exposed to the air. Support for the ore-unloaders, on the other hand,



Cross-section of west pier showing tie-rods, bulkheads, ore unloader runways, and tracks

lake, some 2,500,000 cu. yd. of material was removed by a 12-yd. dipper dredger from the lake bed. The average rate of dredging was 12,000 cu. yd. in 24 hr. The material was discharged into hopper-barges, taken out about 12 miles from the shore and there dumped into the lake.

Dumpers and Unloaders

Of the three wagon-dumpers installed on the eastern and central piers, one was a new machine weighing 1,600 tons, and the other two, which had previously been in use at the N.Y.C. R.R. riverside terminal in Toledo, and had been reconditioned and moved to the new port piecemeal,

had to extend throughout the 700-ft. run of the gantries. It consists of two two-rail tracks spaced 71 ft. apart, and each track is carried on a 700-ft. concrete wall, as shown in section in one of our illustrations. It will be noticed that the two walls are tied together similarly to the sheet-piling walls, as already described. Here again the concrete is carried down to low-water level, and the supporting piles have their heads encased in it. No particular difficulty was experienced in the driving of this large number of piles and sheet piles.

For the layout of the new port-terminal and its yards, about 56 miles of track were

on 8 in. of cinders and subsequently lifted on to an additional 4 in. The whole formation has been drained by an elaborate system of metal and concrete drains.

Among the buildings constructed are general and yard offices, conveyor-coaling, water-treating and sanding plants, a 100,000-gal. water tank, locomotive and wagon repair and store buildings in the servicing yard, Barney mule pits under retarders on the coal-loading tracks, and substation, store and other buildings on the piers. A description of the operating side of this port-terminal will follow in part 2 of this article.

(To be continued)

Rolling Stock for London Transport

First post-war cars, with increased window space, are now ready for service on the District Line



Front end of the converted surface stock driving cars with improved destination and train number indicators

THE first post-war cars for use on London Transport surface lines, which were referred to in an editorial note last week, have now been delivered and will shortly go into service on the District Line. In all, 143 non-driving motor cars are being constructed by the Gloucester Railway Carriage & Wagon Co. Ltd. and the Birmingham Railway Carriage & Wagon Co. Ltd., and at the same time 82 existing trailer cars are being converted to driving

motor cars by the former firm. The designs were prepared under the direction of Mr. W. S. Graff-Baker, Chief Mechanical Engineer (Railways), London Transport Executive.

The trains are arranged for operation in formations of six or eight cars. Additional uncoupling facilities, however, have been provided between the fourth and fifth cars of a six-car train for emergency use. Driving cabs are provided at both ends of

a six-car formation, with a further cab in the two-car unit which can be added to form an eight-car train. Driving cabs are not provided at the intermediate uncoupling point. All cars are equipped with a self-ventilated nose-suspended motor in each bogie. These motors have a one-hour rating of 110 h.p. and are fitted with roller bearings throughout, including suspension bearings. Incorporated with the motor is a pressure fan which operates a fluid gauge type speedometer in the driving cab.

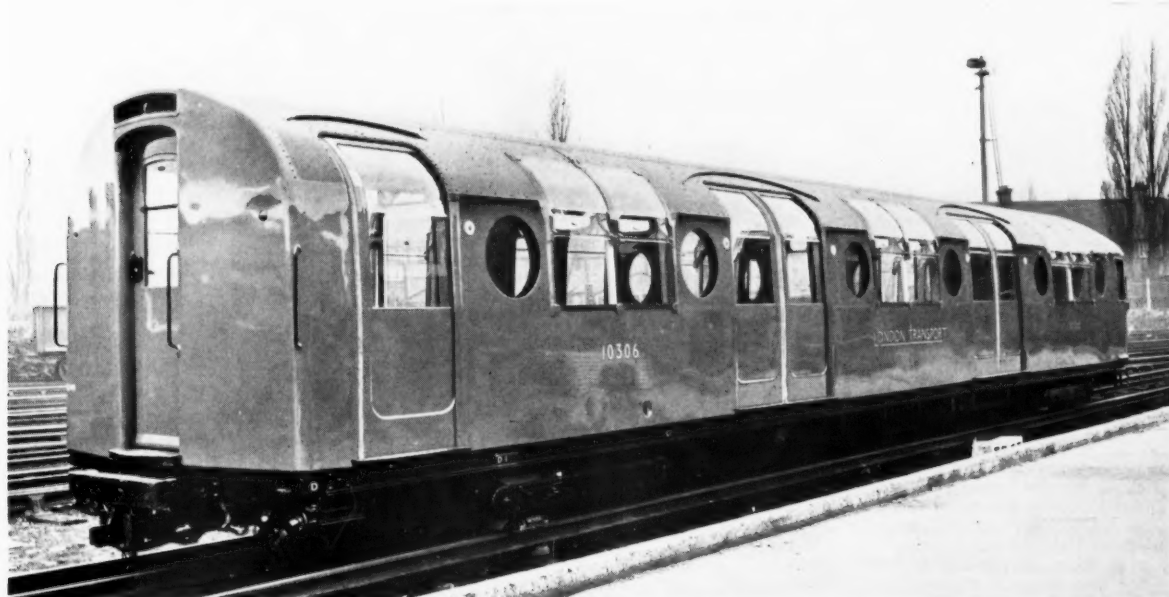
Car Body Design

The appearance of the new non-driving motor car conforms to that of the converted driving cars, the car body design closely following that adopted for London Transport 1938 surface stock; improvements incorporated include provisions for minimising the effects of possible collision, such as anti-telescoping pillars on the exterior of the car ends and flush fitted anti-jamming connecting doors, while a further safeguard against over-riding is the tying of the bogies to the body by means of king-pins. This is the first instance where London Transport has adopted this design.

A re-arrangement of the seating in relation to doorway positions gives an even distribution of seated passengers; no change has been made in the number or size of the doorways. Recesses in the lower side-panels give increased elbow-room at the cross-seat positions. The centre bay of the car contains two unobstructed windows, 4 ft. 11 in. long, separated by a central V-shaped pillar; as before, rebated glass is used to preserve a flush external appearance. All windows are rubber-glazed, and a new type of ventilator gives increased air circulation. Car heaters are of the embedded-element type in cast radiators supported beneath the seat cushions on the front of the seat risers.

Lighting Equipment

An innovation on both the new and the converted cars is the provision of fluorescent lighting. At the junction of the upper and lower ceilings in each car, the



London Transport experimental tube car, showing the windows curved to the contour of roof

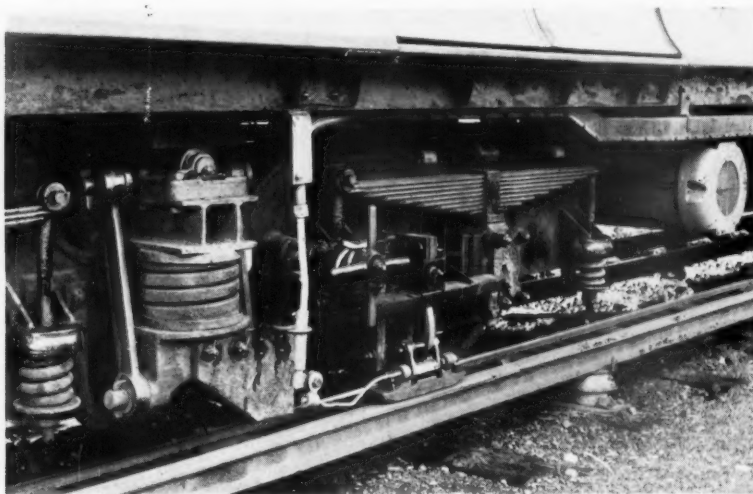
fluorescent tubes are supported in special aluminium housings separated by spacers of similar length, forming a continuous line the length of the car. Each car is equipped with 24 fluorescent tubes operating in parallel from a 110-V. a.c. supply. Resonant starting is employed, and the lamp chokes, capacitors, and resistors mounted in the roof space on the back of the lamp fitting are readily accessible.

Emergency lighting is provided over the connecting doors at the ends of the cars

The bogies are mainly of welded construction, but the side-frames, headstocks, and transomes are fabricated as units and riveted together to form a complete assembly, the non-motored side of the bogie being cross-braced. In place of the conventional spring-plank arrangement, the body load is transmitted through bolster hangers on to two main beams supported from the bogie frame on widely spaced bolster springs, the load transmission in all cases being through "knife-

means of a capstan-type handle on the side of the bogie.

Resulting from 1938 tube stock practice, individual brake cylinders are mounted on the bogies to provide a direct thrust to each brake block, and, instead of using a variety of cylinder sizes to compensate for varying axle loads, the new cars have only two alternative cylinder diameters, for motor and trailer axles respectively, the internal leverage of the brake cylinder unit being adjustable according to the relative loading on the axle concerned.



Retractable shoe gear with height-compensating mechanism

by four 50-V. 45-watt filament lamps mounted in pairs in translucent glass fittings. These lamps, fed from the battery which normally floats across the terminals of the d.c. generator, are, for the sake of simplicity, alight whenever the car lighting is switched on. Emergency "alarm signal" handles are of the non-resetting type which require the use of a key to restore them to the normal position.

Interior decoration is carried out in cerulean blue with silver-bronze metallic finish for the roof fittings; window-sills and framing timbers are in Australian silky oak, blending with sycamore-veneered panelling above sill level, and similar English oak-veneered panels relieved with a black stringing line below; continuous route diagrams are displayed above the cantrail.

Air-Operated Door Equipment

For the air-worked sliding doors on the new cars, the top runner gear formerly used has given place to ungrooved bottom roller wheels running on a flat track, flush with the sill plate, the door being guided at the bottom by side horizontal rollers. An operating facility in use experimentally is the provision of detector lights to indicate to the guard or platform staff when the door interlocks on a car have failed to close properly. To operate these lights, local circuits are taken across the door interlocks on individual cars to energise signal circuit relays when doors are closed, the feed to the guard's pilot lamps and thence to the driver's bell being taken from the driver's control switch at the front of the train across "making" contacts on each relay. Provision is made for isolating the door engines and short-circuiting the door interlocks on single faulty cars so that, if desired, trains may be kept in service with one car out of use.

edge" suspension. The bogies have been fitted with spring-borne shoe gear mounted on insulated brackets carried on the bogie frame. Compensating mechanism, related to a stop on

Improvements in Cab Equipment

The cab equipment includes simpler hand-brake operation, adjustable three-position driving seat, and an instructor's "occasional" folding seat. The self-lapping electro-pneumatic brake controller incorporates improvements designed to facilitate operation and adjustment. A more readily operated rotary face valve replaces the former plug type of driver's isolating cock, and the warning magnet valve, used to "prove" the integrity of the electro-pneumatic brake circuit, is now provided with independent adjustments for valve-lift, pick-up, and drop-away voltage.

In addition to the normal self-lapping contact mechanism, direct acting "application" contacts are also fitted as a safeguard against faulty adjustment, and the contact adjustment itself is made more foolproof by the use of shims and rigid contact "keepers."

The fluid-gauge speedometer is fitted with a rotating shutter to enable the gauge illumination to be adjusted. The speed scale engraved on a plate behind the gauge glass is readily replaceable to compensate for changes in wheel diameter. The auxiliary control cabinet incorporates new pinch-type set and trip switches for auxiliary controls, while for hold-in switches, the former push-buttons are replaced by trigger levers. A luminous



Interior of the non-driving car showing fluorescent lighting

one of the axleboxes, ensures that the shoe height in relation to the running rail is independent of the bogie frame height, while the balata straps, which limit the drop of the shoes for this purpose, enable all shoes on a bogie to be lifted from, and maintained clear of, the current rails by

indication enables the driver to locate his cab light-switch in the dark.

The control of the pneumatically-operated doors from the guard's position at the trailing end of the converted driving cars is by means of key-operated door controllers, which replace the push-button

control equipment formerly used. These are contained in control boxes mounted flush with the end panelling, and also incorporate the Loudaphone heating and lighting trigger switches and lamp indicators for the door interlock circuit (blue), "passenger open" warning (red), and heater control (amber). The controllers themselves are mounted vertically and are operated by a guard's key which can only be inserted or removed in the centre (neutral) position and must be operated through one 40 deg. sector for normal opening of passenger doors and through the opposite 40 deg. sector for closing. In order to set the "permissive" control for individual passenger-opening a release plunger must first of all be operated.

Mechanical interlocking with the "signal" push-button ensures the return of the key to the central position before the train is started. Electrically, the controller is so arranged that the relatively heavy currents for the various circuits are broken, not on the drum by which they are selected, but on a single cam-operated contactor-type series switch. A 600-V. heater is located at the foot of one draught-screen in the guard's compartment, the control of which is mechanically interlocked with the guard's position switch key, so that it cannot be left "on" when the key is removed.

Coupler Mechanism

The automatic couplers fitted to the east end of the driving cars and to the fourth and fifth cars are of new shankless type with channel side frames. In all, 46 contact studs are now provided, although some of them are reserved as spares against possible future train line require-

improved indication for hand-operation. Changes in connection with the compressed-air system on both new and converted cars include the provision of a central corrugated felt filter mounted on an air distribution unit on which are mounted the various isolating cocks, feed valves, and pressure gauges associated with the auxiliary pneumatic systems; all piping beyond this point is in copper, with

sure building up in the brake cylinders of the leading car and causing premature self-lapping of the brake controller.

The electric traction equipment is of the P.C.M. type and is generally similar to that on the 1938 tube stock and was fitted to the cars because of the reliability in service usually associated with this type of equipment. Several minor modifications have been made to improve



View of the elbow recesses in cross-seats, and the exceptionally long windows



Interior of experimental tube car with curved and port-hole windows

ments. Coupler control is from the east ends of the cars only.

On car No. 6, control is by trigger switch, but on car No. 4, which has no driving cab, a self-locking key-operated couple and uncouple switch is mounted on the outside end panel. Electro-pneumatic coupler control mechanism has been modified to give greater protection to the pneumatic equipment against frost and

solderless pipe fittings already standardised for the smaller sizes of pipe. A new design of electro-pneumatic brake unit greatly improves accessibility to the various magnet valves and gives improved protection against freezing to all pneumatic equipment associated with the brakes.

The pneumatic arrangements have been altered to eliminate the use of feed valves and prevent the possibility of leakage pres-

the accessibility and reliability of the equipment.

The master controller is provided with two forward positions; forward position number one gives a reduced acceleration and is suitable for use under conditions of greasy rail which may produce wheel slip; forward position number two gives the maximum acceleration. In the reverse position the lower acceleration is in use.

Field shunting resistances are provided with tappings giving field strengths of 80, 65, 60, 55, or 50 per cent. of full field, from which the required value can be selected. Weak field, which is carried out in two relay-actuated steps, is under the control of the driver by means of the weak field "flag-switch."

A dual-purpose motor generator set is mounted on one car of each pair, together with a 46-V. 56-amp.-hr. battery which floats across the generator. This machine is capable of giving a d.c. output of 4 kW. at 50 V. for battery charging, emergency lighting, traction control, and the operation of electro-pneumatic door and brake equipment, and is capable of supplying alternating current at 110 volts 850 cycles per second from a winding inserted in slots in the main pole shoes of the generator, the a.c. voltage being induced by the change in flux distribution caused by the passage of the teeth and slots of the d.c. armature across the pole faces.

The speed, and, therefore, the a.c. frequency and the output voltages of the motor generator, are held within close limits over a wide range of supply voltages by a vibrator type of regulator which is excited from the generator voltage and controls the machine speed through a 50-V. winding on the motor field. A motor

(Continued on page 737)

Railway Wagon Transporters in France

Development of road-rail containers, trailers, and other equipment to improve door-to-door transport facilities

By C. R. Cazenave

Paris Town Office Superintendent, S.N.C.F.



Movable ramp and length of track for loading wagon on transporter

TO develop door-to-door services, the French National Railways are experimenting with road-rail containers, 6,000 railway owned and 29,000 privately owned; some 650 road-rail trailers; and

front axle being a carrying axle; they are powered by diesel engines and have a wide range of speeds, the maximum speed being from 12 to 15 m.p.h. Trailers are of three types. All consist of a low

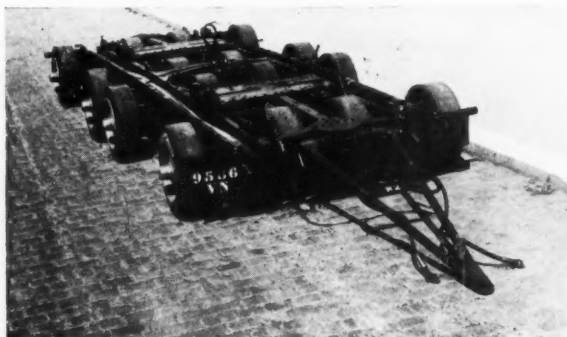
chassis, to afford stability and a low clearance, with the weight distributed over a number of wheels with solid rubber tyres; they have a small turning radius, and powerful brakes.

One type, the 40-ton load trailer, combines two eight-wheel bogies, each consisting of two girders which include the track rails. The girders are connected by one central and two terminal cross-members. The wheels, four inside and four outside the chassis, are coupled in pairs and steered by a connection to the coupling rod. The Westinghouse brake connected with the tractor acts on oil brakes operating on the wheels. An auxiliary air tank on each bogie ensures effective braking, and an emergency hand-wheel works directly on the oil brakes.

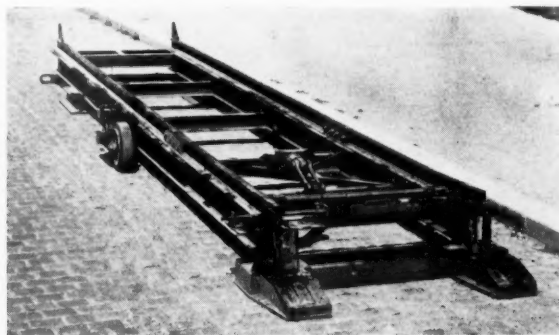
Loading the Wagon

The loading of a wagon on the trailer is by means of a length of track 1 ft. 10 in. above ground level (the height of the trailer) or with a movable ramp. The two bogies are locked together and placed in the axis of the track; the capstan cable draws the front wheels of the wagon on the front bogie, where they are secured; the two bogies are then disconnected, and a movement of the tractor and of the front bogie brings the rear wheels on the rear bogie of the tractor, where they in their turn are locked.

The two bogies are linked by a telescopic steering bar that can expand to allow the transport of wagons with from



Forty-ton trailer, showing Westinghouse brake connection with tractor



Length of temporary track with shackles for securing railway wagon

railway wagons with wheels which can be fitted with pneumatic tyres. The last are still in the experimental stage. A fourth method was devised in 1931 by Monsieur Barthelémy, a French engineer, in the form of a rail wagon transporter built at the S.C.E.M.A. works at Levallois, a low-hung road trailer comprising a length of rail track to carry a wagon. In Italy, and also in Germany through the researches of Professor Culemeyer and with the help of the German State Railways, this device was developed, and proved an effective means of transport for factories and warehouses which for various reasons cannot be served by private sidings.

Since 1942, the Société de Contrôle et d'Exploitation des Transports Auxiliaires (S.C.E.T.A.), the road transport subsidiary of the S.N.C.F., has experimented with the Culemeyer wagon transporter, and since the liberation of France in 1944 has built up a fleet of 11 tractors and 17 trailers, with a garage and workshops, despite difficulty in obtaining spare parts. The tractors have two or three axles, the



Diesel tractor equipped with capstan and cable for drawing railway wagon on to transporter when loading



Tractor with 40-ton trailer, showing telescopic steering bar linking trailer bogies, and wagon wheels secured

10 ft. to 26 ft. wheelbase. At destination the wagon can remain on the bogies, or be moved to a permanent or light temporary track which can be put into position by three men. Loading and unloading take only 5 to 10 minutes with the help of three men, driver included. The average speed is from 6 to 9 m.p.h.; a single tractor is sufficient. The dimensions are:—

Weight	8 tons
Length (with bogies locked together)	22 ft.
Width	9 ft. 2 in.
Height	1 ft. 10 in.
Turning radius	21 ft. 4 in.

The second type, the 80-ton load trailer, has two twelve-wheel bogies (six wheels inside the chassis and six outside). It can carry wagons with up to 36 ft. wheelbase.

The steering of the rear bogie is effected in the same way as in the 40-ton trailer. However, with longer wagons, it is possible to remove the telescopic bar connecting the bogies; the rear bogie is then steered manually. The dimensions are:—

Weight	15 tons
Length (with bogies locked together)	27 ft. 3 in.
Width	9 ft. 10 in.
Height	1 ft. 10 in.
Turning radius	21 ft. 4 in.

The third type is a 40-ton load trailer consisting of one 16-wheel unit for loads with up to 26 ft. wheelbase. All wheels are outside, to keep the chassis low, and are mounted on semi-axes steered by a connection to the coupling rod. Suspension is by torsion bars in lieu of springs.

The dimensions are:—

Weight	10 tons
Length	26 ft. 11 in.
Width	9 ft. 11 in.
Height	1 ft. 4 in.
Turning radius	24 ft. 7 in.

The trailers were used experimentally after the war to recover passenger and goods vehicles on badly war-damaged branches and sidings entirely cut off from main lines. Since then they have resulted in an average traffic of 1,000 wagons carried yearly per trailer. They are operated either by the S.C.E.T.A. on a cost-price basis or hired to other users after a special training course for the drivers employed by the firms concerned.

Rolling Stock for London Transport

(Concluded from page 735)

driven compressor is fitted on the other car of each pair.

The principal contractors and sub-contractors for the surface line cars were:—

Builders, Gloucester Railway Carriage & Wagon Co. Ltd. (54 new cars, 82 conversions) Birmingham Railway Carriage & Wagon Co. Ltd. (89 new cars).
Traction equipment, British Thomson-Houston Co. Ltd.

Wiring of traction and auxiliary equipment, British Thomson-Houston Co. Ltd.

Traction motors, General Electric Co. Ltd.; Crompton Parkinson, Limited, and the Metropolitan Vickers Electrical Co. Ltd.

Traction gears, Metropolitan Vickers Electrical Co. Ltd., and A. Wiseman Limited.

Wheels and axles, Taylor Bros. & Co. Ltd. and Owen & Dyson Limited.

Laminated springs, Jonas Woodhead & Sons Ltd.

Coil springs, Thos. Turton & Sons Ltd.

Roller bearing axle boxes, Hoffmann Manufacturing Co. Ltd. and the Skelko Ball Bearing Co. Ltd.

Suspension bearing sleeves, Hoffmann Manufacturing Co. Ltd.

Sliding and swing doors, Lightalloys Limited.

Brake equipment and compressors, Westinghouse Brake & Signal Co. Ltd.

Door equipment and automatic couplers, G. D. Peters & Co. Ltd.

Auxiliary equipment cases, connection and fuse boxes, etc., Patent Lighting Co. Ltd.

Auxiliary contractors, British Thomson-Houston Co. Ltd.

Car heaters, British Thomson-Houston Co. Ltd.

Lighting fittings and push buttons, Benjamin Electric Co. Ltd.

Speedometers, Sturtevant Engineering Co. Ltd. (fans) and Clifford & Snell Limited (gauges).

Loudspeakers, Clifford & Snell Limited.

Batteries, Peto & Radford.

Air filters, Vokes Limited.

Windscreen wipers, Klaxon Limited.

Glass, Pilkington Bros. Ltd.

Moquette, J. Holdsworth & Co. Ltd.

Advertisement frames, Player, Mitchell & Breedon Limited, and Worcester Windshields & Casements Limited.

Ventilators, Worcester Windshields & Casements Limited.

Drop light fittings and rubber glazing, Beckett, Laycock & Watkinson Limited.

Copper pipe fittings, Imperial Chemical Industries.

Fire extinguishers, Read & Campbell Limited.

New Tube Car Design

As an experiment London Transport has also converted a tube car of the present standard (1938) pattern to provide a high window-line by carrying the glass of the windows round into the roof to the level of the top of the doors. The doors themselves have also had their windows extended upwards. To give more stiffness to the door pocket structure, the rectangular outer light was replaced by a round window in a steel panel, providing a gusset effect in the corners; a new intermediate window pillar of steel tubular section replaced the old pillar and part of the

associated roof stick; the new pillar was provided with lugs for attaching the waist rail to it and was connected to the monitor rails existing at doorway header.

The new windows are glazed in three pieces, and the upper piece is curved to the roof contour, the lower piece being straight. Between the two is left a space filled by a tilting ventilator glass; all the horizontal edges at the ventilator region are frameless for full vision and the ventilator glass is curved in the vertical direction to provide enough stiffness to withstand rough handling.

The lights in the sliding doors have also been extended to the top of the doors in two pieces, which butt together at the springing point between the curved and straight portions. The butt joint is made with lightweight metal channels. An innovation is that the fixed lights of the car body are clipped to the outside of the car by their corners and butt on to sorbo rubber strips; this construction is experimental, and is intended to overcome certain difficulties experienced with water lodging on the upper edge of the car panel, against which the glass is usually secured. The work of reconstruction was carried out in the Acton works of London Transport.

Repairs to Bopeep Tunnel, Southern Region

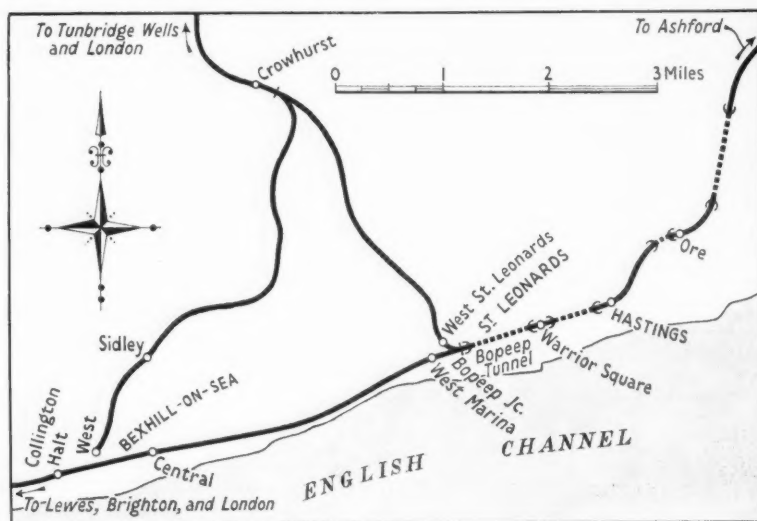
Sudden movement of side walls, after long period of stability, has necessitated temporary suspension of train services

BOPEEP Tunnel, on the main line of the Southern Region from London to Hastings, is situated between St. Leonards (Warrior Square) Station and Bopeep Junction, West St. Leonards, where the two routes from London, *via* Tunbridge Wells, and *via* Lewes, converge. It is 1,318 yd. long, and was built by the South Eastern Railway, and opened on February 13, 1851.

The tunnel passes through the geological formation known as the Wadhurst Clay, which consists of a complex and

several points when the eight construction shafts were sunk.

Until the autumn of the present year, there had been no signs of trouble in the western part of the tunnel, apart from the normal gradual deterioration of the brickwork, which is made good at regular intervals during routine repairs. A minor crack, and very slight settlement, occurred several years ago, and were kept under careful observation; but the defect did not develop, and no repairs, other than the normal patching, became necessary.



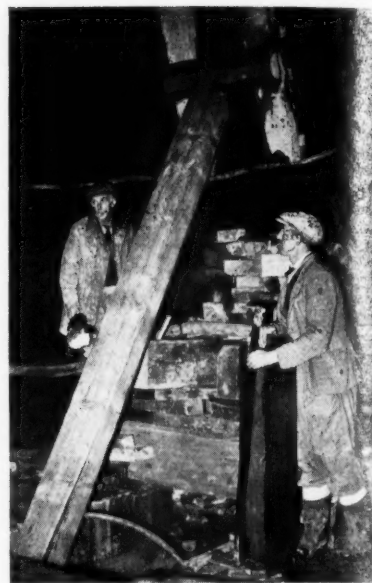
Map of the railways in the Hastings district

very variable series of clays, silts, and sands in differing degrees of compactness. Some of the beds contain frequently-occurring but irregular bands of sand, siltstone, and shaly clay, interspersed with softer material. The tunnel carries a double line of railway, and is lined with brickwork in the form of an elliptical arch, and 2 ft. 10 in. thick. The footings of the walls are at varying depths below rail level, depending on the depth at which firm sandstone or other rock-like material was encountered when the tunnel was built.

So far as is known, the tunnel was constructed without an invert arch below the tracks, which is an indication that, a century ago, the rock on which the side walls were built was considered to be an adequate foundation. At some time during the life of the tunnel, a short length of invert was constructed near the eastern (Warrior Square) end, from which it can be concluded that some weakness developed at this point.

Water in very considerable quantities finds its way into the tunnel, for the most part near the middle, in the vicinity of one of the air shafts, which collects water from the ground above. This water, and any other which percolates through the brickwork or the tracks, is collected in a centre track drain, which discharges at the west end of the tunnel. The amount of water in the strata through which the tunnel is driven is revealed by old records, which show that springs were struck at

About the middle of September however, cracks suddenly appeared in the side walls of the tunnel, some 150 yd. from the western end, and settlements, inward movement of the walls, and upward displacements of the track, began to occur



Temporary timbering for support of defective brickwork

over a length of about 70 yd. At first, these movements were very slow, but when it was found that they were continuing, it was decided to insert a series of reinforced concrete inverts in 4-ft. widths. To provide greater clearances, one track was removed completely, and the other slewed into the centre of the tunnel.

After a further examination of the tunnel had been made, it was decided to suspend single-line working, and to facilitate and expedite the repairs by giving the Chief Civil Engineer complete possession from November 27. To ensure the security of the tunnel while the inverting and any necessary rebuilding are in progress, heavy timbering is being erected to support the brick lining of the affected length.

All train services between Hastings and St. Leonards (West Marina), and Hastings (Continued on page 747)



Adjustable steel struts for shuttering in excavation for new inverts

RAILWAY NEWS SECTION

PERSONAL

Mr. O. H. Beale has been appointed Minister of Information & Transport in the new Australian Cabinet.

Mr. W. Melville Codrington has joined the board of the Antofagasta (Chili) & Bolivia Railway Co. Ltd. and those of its subsidiary companies, the Aguas Blancas Railway Company, the Andes Trust Limited, and the Chilian Northern Railway Co. Ltd.

Mr. J. C. Patteson, European General Manager, Canadian Pacific Railway, has left on a visit to the company's headquarters at Montreal. He expects to return to London on January 15.

Mr. Leslie Edwards, Operating Assistant to the Operating Superintendent, Paddington, has been appointed Divisional Superintendent, Bristol, Western Region, British Railways, from January 2, on the retirement of Mr. R. G. Pole.

The retirement was gazetted recently from the Corps of Royal Engineers, on September 1, 1949, with the honorary rank of Colonel, of Lt.-Colonel D. McMullen, who is an Inspecting Officer of Railways in the Ministry of Transport.

Mr. H. H. Andrews retires on December 31 from the position of Adviser to the Traction Department of The English Electric Co. Ltd. He was previously the company's Manager of Traction Sales & Contracts, the position now held by Mr. C. C. H. Wade.

We regret to record the death in Paris on December 18 of Mr. A. M. Newbold, O.B.E., General Agent in France of British Railways.

The late Colonel Sir Philip Cahill Sheridan, a Member of the Indian Railway Board from 1923-29, left £35,241.

A cocktail party was held on December 15 at the Charing Cross Hotel, which was attended by a number of those who have been prominently associated with the editorial side of the *L.N.E.R. Magazine* (the last issue of this in its present form was published recently, and it is being replaced from the beginning of 1950 by the *British Railways Magazine*, Eastern Region, North Eastern Region, and Scottish Region Editions). Those present included:—

Mr. R. Bell, formerly Assistant General Manager, L.N.E.R.; Mr. O. H. Corble, formerly Assistant General Manager (Ancillary Services), L.N.E.R., and now Chief Officer (Marine), Railway Executive; Mr. George Dow, sometime Press Relations Officer, L.N.E.R., and now Public Relations & Publicity Officer, London Midland Region; Mr. O. J. Hickman, Harrison & Sons Ltd.; Mr. J. L. Salmon; Mr. H. E. Smith; Mrs. A. M. Edwards; Mr. A. J. Moon; Mr. A. M. Hogg; Mr. E. M. Bywell; Miss A. Rowbotham; Miss P. Wintersgill.

Mr. F. W. Hawksworth, M.I.Mech.E., J.P., Chief Mechanical Engineer, Western Region, British Railways, who, as recorded in our December 16 issue, is retiring on December 31, was born on February 10, 1884, and entered the service of the Great Western Railway as an apprentice in the Locomotive Works at Swindon. After a period in the testing house, he was appointed a draughtsman in 1905. In 1923 he was appointed Assistant Chief

On Wednesday last, at a luncheon at Paddington at which Mr. K. W. C. Grand, Chief Regional Officer, Western Region, was in the chair, and which was attended by Sir James Milne, formerly General Manager, Great Western Railway, and a number of past and present senior officers, a presentation was made by Mr. Grand to Mr. F. W. Hawksworth, Chief Mechanical Engineer, on Mr. Hawksworth's retirement.



Elliott

[& Fry

Mr. F. W. Hawksworth

Chief Mechanical Engineer, G.W.R., and Western Region, British Railways, 1941-49

Draughtsman, and, in 1925, became Chief Draughtsman. He was appointed Assistant to the Chief Mechanical Engineer at the beginning of 1932, when Sir William Stanier left Swindon to become Chief Mechanical Engineer of the L.M.S.R., and was himself appointed Chief Mechanical Engineer in 1941 on Mr. C. B. Collett's retirement. Apart from the responsibility of his office, he devotes much of his time and energy to the welfare of the railwaymen and the social interests of Swindon. Mr. Hawksworth has for many years taken a keen interest in educational matters, and is a member of the Swindon Education Committee, a representative of the Association of Technical Institutions and a member of advisory committees to the City & Guilds of London Institute; he was for ten years a Member of Council of the Institution of Mechanical Engineers. In addition, Mr. Hawksworth is a Justice of the Peace for the Borough of Swindon.

Mr. G. Steel, at present Joint Managing Director of the United Steel Cos. Ltd., has been appointed Managing Director, from January 1, on the Chairman (Sir Walter Benton Jones) relinquishing the office of Joint Managing Director. Mr. A. J. Peech, Assistant Managing Director, becomes Deputy Managing Director.

Mr. F. C. Burton has been appointed Stationmaster, Sheffield (Victoria), Eastern Region, British Railways, succeeding Mr. W. H. Burton, recently appointed Stationmaster, York, North Eastern Region.

Mr. T. E. Calverley has been appointed Chief Engineer of the Rectifier Department of The English Electric Co. Ltd., and will operate from Stafford Works.

Mr. Mervyn F. Ryan, formerly Managing Director, Buenos Ayres & Pacific Railway, has left Buenos Aires for Washington, D.C., where he will report to the World Bank before joining, as railway consultant, a mission of that institution which has been invited by the Government of Siam to visit that country.

INSTITUTION OF RAILWAY SIGNAL ENGINEERS

The council of the Institution of Railway Signal Engineers announces that it has made the following nominations to fill the vacancies which will occur at the annual general meeting in 1950, and that formal notices will be issued to members:— President, Mr. F. Horler; Vice-President, Mr. T. S. Lascelles; Ordinary Members of Council: Messrs. E. G. Brentnall, F. B. Egginton, J. H. Fraser, J. F. H. Tyler, C. F. D. Venning (from the class of Member), and Messrs. A. L. Mills, R. A. Powell, M. Le Sueur (from the class of Associate Members). Mr. S. Williams will become the senior Vice-President, and Messrs. T. Austin, F. Burton, C. G. Derbyshire, J. C. Kubale, D. G. Shipp (Members) and Messrs. F. Mann, N. Marshall and W. Owen (Associate Members) will continue in office as Members of Council. Mr. T. S. Lascelles retires from the combined office of Honorary General Secretary & Treasurer on December 31, and will be succeeded as Honorary General Secretary by Mr. G. J. Dickinson, Room 710, Euston House, Eversholt Street, London, N.W.1, and as Honorary Treasurer by Mr. B. Reynolds, 48, Wharnclyffe Gardens, South Norwood, London, S.E.25, from January 1, 1950.

Mr. Cecil Hipwell, Director & General Manager of Redpath, Brown & Co. Ltd., one of the structural engineering subsidiaries of Dorman, Long & Co. Ltd., has been appointed a Special Director of the latter company.

Under a reorganisation of the Publicity Departments of the Brush Electrical Engineering Company and Associated British Oil Engines Group, Mr. J. D. Dodd, Exhibition Manager for the Group and Publicity Manager for Petters Limited, Small Engine Division, has been appointed Advertising Manager for the A.B.O.E. Group, while the advertising department and general publicity of the Brush Electrical Engineering Co. Ltd., Loughborough, will continue to be controlled and handled by Mr. Lewis Hart, Publicity Manager to Brush since 1934, and Joint Publicity Manager to the Brush and A.B.O.E. Group since 1946. Mr. Dodd will be at the A.B.O.E. headquarters at 32, Duke Street, St. James's, London, S.W.1 (Whitehall 6177), and will have under him an Advertising Assistant at each of the factories in the Group: Mr. J. H. Sutherland, who has taken over Mr. Dodd's work at Staines, and Mr. R. D. Rowland-Hill, at Stockport, are so far the only two appointed. Mr. Mervyn Talbot, Press & Public Relations Officer for Brush and A.B.O.E. for the last three years, has resigned to join W. S. Crawford Limited, Advertising Agents, who are taking over the entire Group advertising account from Technical & General Advertising Agency

Limited on January 1. His place has been taken by Mr. Hugh Barty-King (Assistant Press Officer for the last two years at the Ministry of Civil Aviation and before that with London Transport), who is also at the Duke Street headquarters; he will be responsible, with an editorial panel of three, for *The Journal of the Brush Group*.

MESSAGE FROM MR. JOHN ELLIOT TO SOUTHERN REGION STAFF

Mr. John Elliot, Chief Regional Officer, Southern Region, British Railways, who is leaving that Region to become Chief Regional Officer of the London Midland Region on January 1, has contributed the following message to the *Southern Region Magazine*:—

After 25 years on the "Southern"—Railway and Region—I leave to take over the post of C.R.O. of the London Midland Region at Euston on January 1 next. A quarter of a century ago the Southern Railway was barely getting into its stride under its great leader Sir Herbert Walker, whose death we mourned so recently. Today British Railways is in the same stage of its development, and it is inevitable and natural that there should be an increasing number of exchanges between the different Regions if British Railways is to become a reality. When I came to Waterloo in January, 1925, I found much doubt as to the wisdom of moving a "South Eastern" man from, say, Dover to a station in Devon, or a "Brighton" man to North Kent. We soon learned that these doubts and fears were groundless, and later on no one questioned the many moves of this kind that took place. So it will be with B.R.

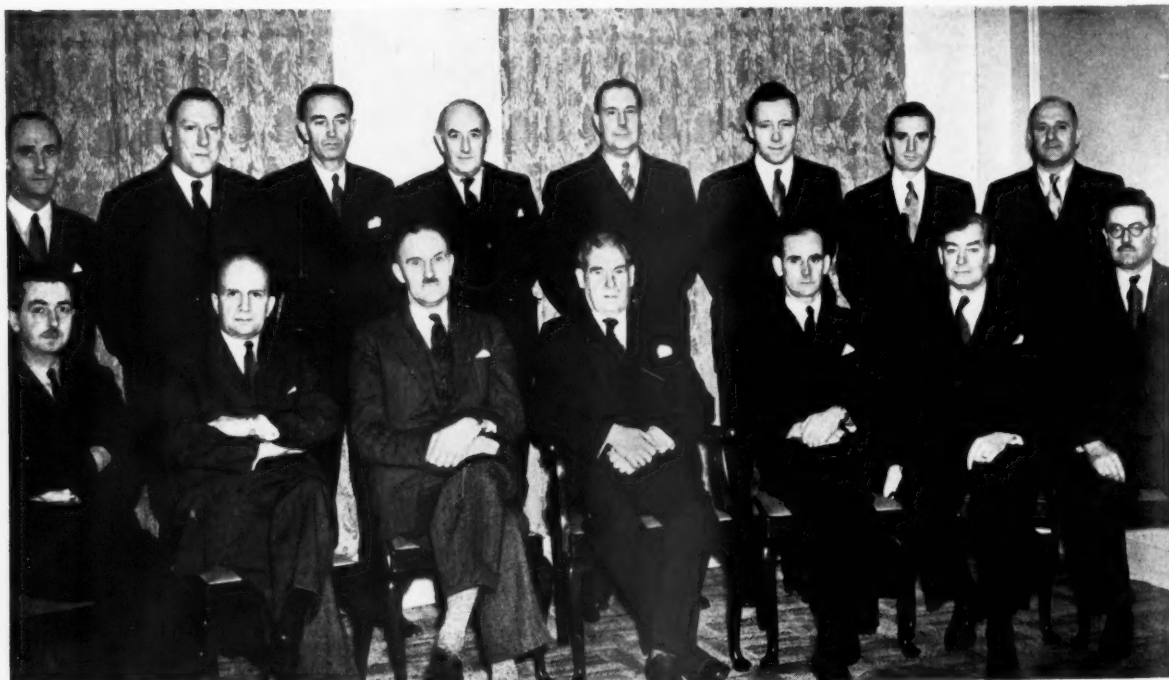
None the less, I leave our own railway, on

which I have grown up, and the many friends I have on it, with very real regret, and will always remember the days and years in the South as the happiest and best of my life. To all who have for so long given me their trust and friendship, and wise counsel, and to the thousands of men and women of the S.R., who have worked so hard to make our railway and Region the success it undoubtedly is in the public estimation, I would like to offer my best thanks. In saying goodbye, may I ask you to give a genuine welcome to my successor, Mr. Charles Hopkins, C.R.O., North Eastern Region, and formerly an Assistant General Manager, L.N.E.R. You will find him a first class railwayman, experienced, modest, straightforward and fair to all. I know you will support him in the old "Southern family" style. To all, I wish the very best of luck and happiness, long life and good health. God bless you, every one.

SIR CYRIL HURCOMB'S VISIT TO S.E. DIVISION, ROAD HAULAGE EXECUTIVE

As recorded in our last week's issue, various offices and depots in the South Eastern Division of the Road Haulage Executive were inspected recently by Sir Cyril Hurcomb, Chairman of the British Transport Commission, and Major-General G. N. Russell, Chairman of the Road Haulage Executive, accompanied by Mr. J. H. Brebner, Chief Public Relations & Publicity Officer, British Transport Commission. The party was escorted by Mr. E. A. Wilkinson, Assistant Divisional Manager, in the absence through illness of Mr. F. C. G. Mills, Divisional Manager (see also illustration below).

Sir Cyril Hurcomb and General Russell Inspect S.E. Division of R.H.E.



A group taken during the recent inspection by Sir Cyril Hurcomb, Chairman of the British Transport Commission, and Major-General G. N. Russell, Chairman of the Road Haulage Executive, of various installations in the Executive's South Eastern Division (see paragraph above)

Back row (left to right): Messrs. E. S. Williams, Divisional Staff & Welfare Officer; W. J. Irons, Manager, South West District; J. T. Trench, Divisional Engineer; C. F. Roberts, Divisional Stores Officer; M. F. Horner, Manager, North East District; G. Dickinson, Manager, North West District; E. Moffat, Audit Officer; H. Rossington, Manager, South East District
Front row (left to right): Messrs. R. J. Elmes, Divisional Traffic Officer; D. H. Foulds, Manager (Parcels Service), S.E. Division; Major-General G. N. Russell; Sir Cyril Hurcomb; Messrs. E. A. Wilkinson, Assistant Divisional Manager; J. H. Brebner, Chief Public Relations & Publicity Officer, British Transport Commission; B. A. Ridley, Divisional Accountant

Charges Scheme for Merchandise Traffic

Outline of a scheme prepared by the British Transport Commission as a basis for discussion with traders

A pamphlet dealing with the principles on which the British Transport Commission proposes to establish a charges scheme for merchandise traffic was issued on December 14.* This scheme, full details of which are given below, will provide a basis for discussions with traders which the B.T.C. expects to hold early next year. The draft principles given in the pamphlet cover all merchandise traffic conveyed by the B.T.C., with the exception of coal and coke and patent fuel, which most likely will be dealt with later in the same scheme. The draft outline is as follows:—

INTRODUCTORY

The constitution of the British Transport Commission under the Transport Act and the vesting in that body of the railways, inland waterways, and the greater part of the long-distance road haulage industry of the country, require a reorientation of outlook and ideas with regard both to the method of operation and the system of charging in the transport industry. The existing railway and inland waterways charging systems, in the main statutory, are not repealed by the Transport Act, but continue in existence pending the introduction of charges schemes settled in accordance with the provisions of Part V of the Act.

It is not the purpose of this document to deal exhaustively with the provisions of Part V in regard to the preparation of charges schemes or with the obligations and rights of the Commission and of the users of transport arising under those provisions. A brief summary of the position is, however, given to assist in the full appreciation of the proposals. Charges schemes, when introduced, will make provision for determining the charges which are to be made for, and, where necessary, the terms and conditions applicable to the services and facilities provided.

Part V of the Act places on the Commission the duty to prepare and submit to the Transport Tribunal a draft charges scheme or a series of such schemes relating to all the transport services and facilities provided by the Commission. The Act prescribes no rigid form to be followed in drawing up a charges scheme; indeed, Section 77 provides that a scheme may adopt such system for the determination of the charges and other terms and conditions as may appear desirable.

The Commission, therefore, has a considerable degree of freedom as to the preparation of draft charges schemes which, taken together, will comprise a comprehensive code of charging covering the whole of its transport services. Nevertheless, in carrying out this task the Commission must not only act in accordance with the provisions of Part V, but must also give careful regard to such other provisions of the Act as are relevant. In this latter connection, the following points, among others, have to be considered:

(i) It is the general duty of the Commission so to exercise its powers under the Act, as to provide or secure or promote the provision of an efficient, adequate, and economical and properly integrated system of public inland transport. For this purpose it is to take such steps as it considers necessary for extending or

improving transport facilities, so as to provide most efficiently and conveniently for the needs of the public, agriculture, commerce, and industry.

(ii) All the business carried on by the Commission is to form one undertaking, and the Commission is so to conduct that undertaking and to levy such charges as will secure that its revenue is not less than sufficient for making provision for the meeting of charges properly chargeable to revenue taking one year with another.

(iii) Where regular goods transport services of different kinds are being provided by the Commission between the same points, a trader must be allowed freedom to choose the service he considers most suitable to his needs.

In accordance with Part V of the Act, a Charges Scheme, having been prepared and submitted to the Transport Tribunal for confirmation, will then be considered by that court at a public enquiry at which objections or representations of bodies representative of any class of persons using facilities or services to which the scheme relates, or any nationalised body similarly interested, may be heard. The Tribunal also has discretion in certain circumstances, to hear representations made by bodies representative of providers of services competing with those to which the scheme relates.

A scheme confirmed—with or without alteration—by the Tribunal will come into operation on a date to be specified and will have effect notwithstanding anything in any statutory provision relating to the subject matter of the scheme.

PRESENT POSITION

The present position with regard to the respective services vested in the Commission as affecting the carriage of merchandise and the charges therefor is:—

(a) Railways

(i) Merchandise by goods train service:

The railways are common carriers except for dangerous goods and livestock, and, apart from very exceptional circumstances, must accept all traffic tendered for conveyance between all points where facilities are available, under terms and conditions of carriage which are statutory.

Their charges are controlled by the Railways Act, 1921, and by the goods train classification of 21 classes and schedules of standard charges which were approved by the Railway Rates Tribunal consequent on that Act. The goods classification, in accordance with the 1921 Act, took into account various factors such as value, bulk in comparison to weight, risk of damage, and cost of handling, the first named (value) being predominant. At the present time, however, this classification with the accompanying standard scales is outmoded, as over 80 per cent. of the weight of the traffic is charged at exceptional rates whose levels are anything from 5 to 60 per cent. or even more below the standard charges.

The number of these exceptional rates has been estimated at many millions, with the result that there has been a considerable divorce between the classification and standard scales on the one hand, and the rates actually charged on the other. For much of the traffic carried

by rail there is no consistent relationship between classification and rates.

In the main, goods train traffic has been carried at carrier's risk, except in those cases where statutory reductions for owner's risk are provided, or, in exceptional cases, where, on account of the nature of the commodity, it is carried only at owner's risk.

Except for articles covered by the provisions of the Carrier's Act, 1830, and livestock, there is no limitation of the amount of the railways' liability for loss or damage.

(ii) Merchandise by passenger train service:

The railways are common carriers by passenger train only in respect of perishables, passengers' accompanied luggage, mails, and post office parcels.

The provisions of the Railways Act, 1921, also cover the charging of merchandise by passenger train or other similar service, and there is a separate statutory classification for such traffic with standard and exceptional scales. In addition, there are also numerous exceptional rates for various traffics between specific points.

The scales provide for both carrier's risk and owner's risk conditions, but in practice the majority of such traffic is carried at owner's risk.

Except in the case of articles covered by the provisions of the Carrier's Act, 1830, and livestock, there is no limitation of the amount of the railways' liability for loss or damage.

(b) Road

As distinct from railways, road hauliers are not bound by any statutory rates structure, nor are they generally under obligation as to the provision of facilities. They are, therefore, in the position of being selective both in the class of traffic they desire to carry and also the points between which facilities are offered. This has tended towards the concentration of road services chiefly between industrial points where traffic was obtainable on both outward and return journeys. This round-trip loading, together with selectivity of traffic suitable for road conveyance, has led to very keen competition between the road hauliers themselves and also with the railways, rates often being at low levels when compared with the railway standard scales for the higher classified traffic.

Road hauliers generally accept traffic at carrier's risk, but it has been customary for many of the larger hauliers to impose a limit of liability.

(c) Inland Waterways

The conveyance charges made by statutory canal carriers are governed by statute which provides for a classification of eight classes with maximum charges fixed under Orders of 1893 and 1894, as amended by subsequent legislation. A large proportion of the traffic is, however, conveyed by bye-traders who are not bound by statute. There is no general rule as to risk—some statutory carriers apply carrier's risk conditions, but the bye-traders generally carry under owner's risk conditions. Where liability for loss or damage is undertaken, it is sometimes limited as to amount.

OBJECTIVE

There now arises the question of what is needed to co-ordinate the charging arrangements of the three services.

The Commission has to face the task of providing for each means of transport a

* "Draft Outline of Principles Proposed to be Embodied in a Charges Scheme for Merchandise Traffic." British Transport Commission. Price 1s.

system of charging which will be effective and simple, and which, while meeting its statutory obligations as to revenue, will assist in the promotion of an efficient, adequate, economical, and properly integrated system of transport, in order to provide most efficiently and conveniently for the needs of the public, agriculture, commerce, and industry.

The best practicable foundation for achieving these ends is to provide a classification, together with conditions of carriage, regulations, and chargeable distances, which, as far as possible, shall be common to all three services. The charges by the respective forms of transport may, however, differ, but should be so framed as to encourage traffic towards the service which can convey it most conveniently and economically.

PRINCIPLES TO BE EMBODIED

The objective has been broadly and simply stated, but to achieve it involves the weighing up of many varying factors, often of a conflicting character.

The Commission has prepared a series of principles on which a draft charges scheme for merchandise traffic should be based to achieve that objective, and the object of this document is to indicate those principles in their application to general merchandise traffic (not including coal class traffic).

In many ways the scheme embodies new features, but it has been designed as an advance on existing practice to which all are accustomed rather than as an entirely new system. The over-riding consideration is that, wherever practicable, the principles should be common to all three services.

(a) Conditions of Carriage

(i) The conditions will be common to all three services, including in the case of the railways merchandise conveyed by both goods and passenger trains, with suitable provision for such variations in detail as may be necessary to meet particular circumstances which are applicable solely to one or other form of transport.

(ii) As a general principle, traffic will be conveyed at carrier's risk, except those traffics which, by reason of their nature, will only be accepted at owner's risk. Traffic not properly protected by packing will be conveyed under conditions which relieve the carrier of liability arising from the inadequacy of the packing. The railway practice of providing alternative rates at carrier's and owner's risk conditions will be discontinued.

(iii) The maximum amount of the carrier's liability will be specified. Should the value of the traffic exceed such maximum the sender will have the option of declaring the full value and paying a supplementary charge to cover the risk in respect of the excess value.

On these broad principles, conditions have been drafted for general merchandise and for livestock. (See Appendix, page 743.)

Separate conditions will be provided in respect of coal, milk, newspapers, and dangerous goods.

(b) Classification and Rates

(i) Form of classification and scales:

In determining the classification of individual commodities, the following factors will be taken into account:—

Loading capability, i.e., bulk in comparison to weight, or, in other words, the quantity capable of loading in the normal operating unit; stowage potential; suitability for loading with other goods; cost

of handling; risk of damage (or loss); and value.

Loading capability will be the prime factor, and value will be reflected to a lesser degree than in the existing railway classification. Quantity will be reflected by the provision of scales for differing weights of consignment up to the potential loading of a traffic in the normal operating unit.

The rates scales applicable to each traffic will be shown in the classification alongside the traffic and will vary according to the weight of consignment. The lowest scale allocated to a traffic will be for the weight of consignment which with reasonable tolerance would load in the normal operating unit, as shown. The form of the classification to reflect the proposals outlined above will be on the lines given in the table.

The scales for rail and road traffic will be on a door-to-door basis, but railways will make provision for appropriate charges for station and siding traffic in

less than one ton in weight. The effect of this higher level of charge will be relatively greatest on the smallest consignments. The charges will be so graded that this relative effect decreases as the weight of consignment increases until at one ton it disappears.

Special "small consignment" scales up to one ton will be provided and the classification will indicate which of the scales is applicable to each traffic. Separate scales will be provided for road services and railways (merchandise train and passenger-train services).

The scales will provide charges mile by mile with appropriate weight gradations, e.g.: 3, 5, 8, 11, 15, 21, and 28 lb.; then each 14 lb. to 2 cwt.; and thereafter each 28 lb.

The scales will be on a "per consignment" basis with the following provisos:—

(a) If the gross weight of the consignment is less than 28 lb. each individual package or article to be charged as a

Scales for consignment of

Traffic	10 tons	8 tons	6 tons	4 tons	2 tons	1 ton	Less than 1 ton
A			9	10	11	13	13 5
B	5	6	7	9	11	13	13 5
C		9	10	11	12	13	13 5
D		10	11	12	13	14	14 5
E				13	14	15	15 5
F	10	11	12	13	14	15	15 5
G					14	15	15 5

All figures shown are purely for purposes of illustration

consignments of 1 ton and over. The scales will indicate the gross chargeable figures for the services provided, and the railway practice of detailing an arbitrary amount for each individual service will cease. The Executive will perform all the services included in the contract, and if at the subsequent request of the consignor or consignee any of these services are not performed by the Executive, rebates will not be allowable.

Traffic dealt with through private sidings will be subject to allowances or additional charges according to the circumstances of each case. The service of loading into, or unloading from, railway wagons traffic consigned to or from "station" will be the responsibility of the trader. Charges for conveyance of inland waterways traffic by the vessels of the Docks & Inland Waterways Executive will not be on rigid scales, but will be appropriately related to the road or rail rates for the traffic concerned.

(ii) Collection and delivery:

Traffic will be conveyed according to the terms of contract, i.e., as consigned. Scales of charges will be provided for collection or delivery by road vehicle of traffic to or from station, wharf, or depot, where such services are required outside the conveyance contract.

Railway outboundary charges will not arise under the new method of measuring distances described under section (d) Distances. Certain traffics which are difficult or objectionable to handle will be collected or delivered only by special arrangement.

(iii) Small consignments:

It is the practice generally to charge small consignments at a relatively higher rate than tonnage consignments. It is proposed to apply the principle of relatively higher charges to all consignments

separate consignment unless it is cheaper to charge as a consignment of 28 lb. or over, as in (b) below.

(b) For consignments of 28 lb. and over consisting of more than one package, each package or individual article to be treated for charging purposes as weighing not less than 14 lb.

(c) A minimum charge as for 28 lb. to be applied to consignments forwarded by merchandise train or inland waterways.

The scales will cover the services of collection and delivery and rebates will not be made if at the request of the trader such services as these are not performed.

(iv) Merchandise by passenger train:

For those traffics which do not normally pass by goods train, e.g., milk (liquid), newspapers, appropriate scales of charges will be provided. For those traffics which also pass by goods train, the charges for passenger train services for consignments of 28 lb. and over will be higher than those for goods train services.

(v) Returned empties:

Returned empties generally are a light loading traffic and under present charging arrangements are not remunerative. When the present railway scales of charges for the various classes of returned empties were adopted, it was advanced by the traders that the railways were able to concede those unremunerative charges because of the payment they were to receive on account of the "fulls" traffic.

In future, with a classification based mainly on "loadability," there is no margin to permit of special treatment for returned empties. Provision will be made in the classification for empties in various categories, according to their loading

capabilities, and applied to all "empties," whether new or returned.

(vi) *Classification regulations and instructions:*

The new classification obviously requires regulations which, as far as practicable, will be applicable to all services of the B.T.C. The draft regulations which it is proposed to apply will be issued later.

(vii) *Special rates:*

The aim of the new scheme is to encourage the tender of traffic for conveyance in economical loads and to give a benefit to the trader where these conditions are met by the automatic provision of a more advantageous rate. This will provide on a consistent and methodical basis for the normal requirements of trade and industry and avoid the need for the existence, as in the past, of a widespread system of exceptional rates the continuation of which is incompatible with an orderly scheme of charges.

There are manifest advantages to trade and industry in a rational system of transport charges which, while taking account of the economies of transport, still preserves a reasonable relationship between one charge and another where the circumstances are the same or similar.

It is the object of the scheme, therefore, to avoid as far as practicable the complexities and inconsistencies which arise when departures are made from a soundly designed plan. It is realised that exceptional cases may arise where the development of a substantial flow of traffic is contingent on the level of transport costs, and in such instances, the need and practicability of a departure from the plan in the form of a special rate or charge will be taken into consideration.

(viii) *Agreed charges:*

It is proposed to continue the principle of making contracts with traders for the whole or an agreed part of their traffic at agreed charges. These contracts may be with one or more of the Executives according to circumstances.

(ix) *Road contract charges:*

Provision will be made in the scheme for the making of arrangements whereby a specified vehicle or vehicles may be placed at the sole disposal of a trader for the carriage of his merchandise, at reasonable charges, according to the circumstances in each case.

(x) *General:*

The foregoing proposals are designed to encourage the forwarding of traffic in consignments of weights which will assist in the economic use of vehicles. For certain commodities, notably scrap iron and steel, which have widely varying load capabilities, provision will be made for a "per vehicle" condition.

(c) *Livestock*

To simplify the charging of livestock by rail, it is proposed to introduce a system under which animals carried in ordinary cattle trucks will be classified on a "per head" unit system related to the loading capability in a large truck subject to an appropriate minimum charge.

Under the proposed unit system, each type of animal will be allocated an appropriate number of units according to size and other characteristics. Under this system, the existing standard and exceptional scales and rates will be replaced

by a single station-to-station scale on a simple unit and mileage basis.

The charges will be comprehensive of all the services normally necessary for the particular journey. If cartage at either end of the journey is performed, appropriate charges will be made.

The services included in the station-to-station charges will be as follow:

(i) Assistance in loading and unloading where the railway staff is available for that purpose.

(ii) Sawdusting and the cleansing of wagons.

(iii) Sheeting (where traffic is sheeted)

(a) in accordance with Statutory Orders; or

(b) at the discretion of the Railway Executive.

(iv) Feeding and watering except as indicated below.

Additional charges will be made for sheets specially provided at the request of the trader; feeding and watering at ports in respect of import and export traffic; at special request of trader; when transit is interrupted by causes beyond the control of the railways.

Livestock carried in other than ordinary cattle trucks will be provided for as follows:—

In horse-boxes or specially constructed cattle vehicles, a special scale comprehensive of all normal services. Small animals which today are charged as general parcels by passenger train, at the new scale for parcels by passenger train. Dogs on chains, a special scale of charges.

Wild animals will only be accepted at the sole risk and responsibility of the owner, and the charges will be on a "per truck per mile" basis, except in the case of small animals in suitable containers conveyed by passenger train in guard's van which will be charged as "parcels."

The scheme will provide that for livestock conveyed by road the "per head" unit system will apply with appropriate scales on a door-to-door basis. Where specially constructed vehicles, e.g., horse-boxes, are required, they will be subject to special arrangements and terms. Owing to the special circumstances inherent in the transport of livestock, special charging arrangements may be required for local traffic.

(d) *Distances*

To assist in the co-ordination of charging arrangements, it is essential to introduce a system of chargeable distances, capable of application by and common to all services. To provide a chargeable distance between every pair of points in Great Britain would involve the calculation of millions of distances, and, therefore, it is proposed to introduce a group system.

For this purpose, square groups will be used. To form these groups, it is proposed to use the National Grid System, as adopted by the Ordnance Survey following the recommendations of the Davidson Committee in 1938. Under this system, the country is divided into 10-km. squares, i.e., squares having sides of approximately 6½ miles.

The chargeable distance between groups will be based on the measured mileage between a selected place near the centre of each group, using the shortest route by class A and B roads, except at each end where lower classified roads may be used in order to reach the measuring point. The same chargeable distance will apply from any place in one group to any place

in another group. A Gazetteer will be prepared indicating the reference number of the group in which each city, town, village, or hamlet is located for distance purposes.

It is proposed that, generally, the chargeable distances, once fixed, shall remain, and not be altered by reason of the opening of new by-pass or arterial roads. Special attention will be given in fixing the chargeable distances in those cases where, by reason of estuaries or rivers, the present road routes are circuitous compared with present rail routes and very short distances may also require special treatment.

(e) *Ancillary Services and Charges*

There is a number of ancillary services available to traders and, in general, such facilities will continue to be provided. Provision will be made in the charges scheme for reasonable charges to be made for such services.

GENERAL OBSERVATIONS

This document, which gives a broad outline of the principles on which the Commission proposes to found a charges scheme for merchandise traffic, has been prepared as an indication of what is contemplated. It is not intended to be, nor could it at this stage be, exhaustive or cover all the details which it will be necessary to elaborate; but the Commission thinks that it will be meeting the general desire and convenience of trading bodies by making the document available for general information and as a basis for the discussions on which it desires to embark with trading interests.

APPENDIX

Part I. General Merchandise Conditions

Terms and conditions of carriage of merchandise (other than dangerous goods and merchandise for which terms and conditions are specially provided) by either the Railway Executive, the Road Haulage Executive, the Docks & Inland Waterways Executive, or the London Transport Executive.

Condition 1:

In these conditions "The Executive" means the Executive named in the title of the conditions with whom the contract of carriage is made; and "Trader" means any person sending or receiving, or desiring to send or receive merchandise by the services of the Executive.

Condition 2:

Every consignment of merchandise shall (except as otherwise agreed in writing) be addressed in accordance with the Executive's Addressing Regulations settled by the Transport Tribunal, and shall, if required by the Executive, be accompanied by a consignment note on which shall be stated:—

(a) The full names and addresses (including postal district) of the sender and the consignee,

(b) The station or place of destination,

(c) Such particulars as the Executive may reasonably require of the nature, weight (inclusive of packing), and number of the parcels, articles, or merchandise handed to the Executive for carriage to enable them to calculate the charges therefor.

(d) Whether (when the Executive does not require prepayment) the charges are to be paid by the sender or by the consignee,

(e) Where by arrangement with the Executive the merchandise is accepted "To

wait orders" at any particular station, depot, or wharf that the consignment is "To wait order."

(f) In the case of damageable goods not properly protected by packing, that the consignment consists of such goods.

The Executive shall, if so required, sign a document, prepared by the sender, acknowledging the receipt of the consignment, but no such document shall be evidence of the condition or of the correctness of the declared nature, quantity, or weight of the consignment at the time it is received by them.

Condition 3:

Every railway wagon loaded in a siding not belonging to the Executive shall (except as otherwise agreed in writing generally or in respect of a particular consignment) be labelled by the trader with two labels, which shall be securely affixed one on each side of the wagon, and on each such label shall be stated:—

- (a) The name of the sender.
- (b) The name of the consignee (except where the wagon is loaded with merchandise for more than one consignee).
- (c) The station or place of destination.
- (d) The nature of the merchandise.
- (e) The name of the owner and number of the wagon.

Condition 4:

The Executive shall, subject to and except as otherwise provided for in these conditions, be liable for any loss or misdelivery of or damage to merchandise, occasioned during transit as defined by these conditions, unless the Executive shall prove that such loss, misdelivery, or damage has arisen from:—

- (a) Act of God.
- (b) Act of war or of the King's enemies.
- (c) Arrest or restraint of Princes, or Rulers, or seizure under legal process.
- (d) Orders or restrictions imposed by the Government or any Department thereof.
- (e) Act or omission of the trader, his servant, or agent.
- (f) Inherent liability to wastage in bulk or weight, latent defect or inherent defect, vice, or natural deterioration of the merchandise.
- (g) Casualty.

Provided that where loss, misdelivery, or damage arises and the Executive has failed to prove that it used all reasonable foresight and care in the carriage of the merchandise, the Executive shall not be relieved from liability for such loss, misdelivery, or damage.

Condition 5:

The Executive shall not be liable for loss of or damage to damageable goods not properly protected by packing except on proof that the same (a) arose from the wilful misconduct of the Executive or its servants, or (b) would have been suffered if the goods had been properly protected by packing and the Executive would have been liable under these conditions.

Condition 6:

In the case of merchandise which is conveyed at owner's risk in accordance with the Executive's regulations settled by the Transport Tribunal, the Executive shall not be liable for loss of or damage to a consignment or any part thereof except on proof that the same arose from the wilful misconduct of the Executive or its servants. Provided that nothing in this condition shall exempt the Executive from any liability it might otherwise incur under these conditions in the following cases:—

- (a) Non-delivery of the whole of a con-

signment or of any separate package forming part of a consignment.

(b) Pilferage from packages of merchandise protected otherwise than by paper or other packing readily removable by hand provided the pilferage is pointed out to a servant of the Executive on or before delivery.

Condition 7:

The Executive shall, subject to these conditions, be liable for loss proved by the trader to have been caused by delay to, or detention of, or unreasonable deviation in the carriage of merchandise unless the Executive proves that such delay or detention, or unreasonable deviation has arisen without negligence on the part of the Executive or its servants.

Condition 8:

The liability of the Executive in respect of any one consignment shall in any case be limited:

(i) Where the loss however sustained is in respect of the whole of a consignment to a sum at the rate of £x per ton of the gross weight of the consignment, or

(ii) Where the loss however sustained is in respect of part of a consignment, to the proportion of the sum ascertained in accordance with (i) of this condition which the actual value of that part of the consignment bears to the actual value of the whole of the consignment—unless the nature and value thereof be declared in writing at the time of delivery to the Executive and an increased charge over and above the charge for carriage be paid as compensation for the greater risk incurred, in which case the Executive will, subject to these conditions, accept liability for the loss actually sustained, not exceeding the amount so declared provided that if the actual value of the consignment is greater than the declared value the Executive shall be liable only in the proportion which the declared value bears to the actual value.

Nothing in this condition shall limit the Executive's liability under these conditions below the sum of £y in respect of any one consignment. The Executive shall be entitled under this condition to require proof of the value of the whole consignment.

Condition 9:

Every consignment of merchandise to be carried by the Executive partly by land or inland waterway and partly by sea, or wholly by sea, shall be accompanied by a consignment note, signed by the sender, containing such terms and conditions applicable to the carriage of such merchandise by sea as the Executive is entitled to impose.

Condition 10:

In the case of merchandise consigned to a destination which entails transfer to an independent carrier, which expression shall not include another Executive of the British Transport Commission or a contractor employed by the Executive:

(a) The Executive's obligations and liability, notwithstanding that the merchandise may be addressed through to destination, or may be carried at a through rate, shall only relate or extend to those portions of the journey performed on the system of an Executive or by a contractor employed by the Executive to deliver merchandise within the usual delivering area of a terminal station, wharf, or depot.

The transit by the Executive shall (unless otherwise determined) be deemed to terminate where the journey is to be com-

pleted by any independent carrier, when the merchandise is tendered or transferred to any such carrier, or shall be deemed to be suspended where the merchandise is to be carried by any independent carrier for an intermediate portion only of the journey, when the merchandise is tendered to and not accepted by such carrier or, if so accepted, while it is in the possession of such carrier.

(b) The Executive and any succeeding carrier are authorised as agents for the sender or owner to contract for the further carriage on the terms of any bill of lading or other conditions usually required by any succeeding carrier.

(c) When the place of destination is outside Great Britain, the Executive shall not be liable for loss, damage, deviation, misdelivery, delay, or detention, except on proof that the same arose on the system of an Executive, or while the merchandise was being carried by a contractor employed by the Executive to deliver merchandise within the usual delivering area of a terminal station, wharf, or depot.

(d) When the place of destination is within Great Britain, the Executive shall not be liable for loss, damage, deviation, misdelivery, delay, or detention on proof by them that the same did not arise on the system of an Executive or while the merchandise was being carried by a contractor employed by the Executive to deliver merchandise within the usual delivering area of a terminal station, wharf, or depot.

Condition 11:

Except where otherwise requested by the consignor in writing, or where notwithstanding any such request the Executive is by reason of emergency unable to fulfil the contract of carriage by means of its own services, the Executive shall be at liberty (but without any obligation so to do) to avail itself of the services of another Executive of the British Transport Commission or of an independent carrier for the whole or any part of the carriage of such merchandise, and during the period of carriage by such other Executive or carrier these conditions shall apply.

Condition 12:

The Executive shall not be liable:

(a) (i) For loss from a package or from an unpacked consignment; (ii) for damage, deviation, misdelivery, delay, or detention; unless it is advised thereof in writing (otherwise than on any of the Executive's documents) within three days and the claim be made in writing within seven days after the termination of the transit of the consignment, or the part of the consignment in respect of which the claim arises.

(b) For non-delivery of the whole of a consignment, or of any separate package forming part of a consignment, addressed in accordance with condition 2 hereof, unless it is advised of the non-delivery in writing (otherwise than on any of the Executive's documents) within 14 days, and the claim be made in writing within 28 days after the consignment was handed to the Executive by the sender.

Provided that if in any action brought by a trader against the Executive in pursuance of a claim, the Court by whom such action is tried is satisfied that it was not reasonably possible for such trader to advise the Executive in writing, or to make his claim in writing within the aforesaid times, and that such advice or claim was given within a reasonable time, the Court shall, if, having regard to all the circumstances of the case it considers it

equitable, adjudicate on such claim, without regard to anything contained in this conditions.

Condition 13:

When collection or delivery by road vehicle takes place at the trader's premises the place of collection or delivery shall be the usual place of loading or unloading the merchandise into or from the road vehicle, but the Executive shall not be under obligation to provide any plant, power, and/or labour which, in addition to the Executive's carmen, may be required for loading or unloading at such premises.

Condition 14:

The Executive shall in every case when merchandise is consigned to a station, wharf, or depot of the Executive (which in this condition includes a siding provided by the Executive for general public use) and is not to be delivered by the Executive's road vehicle, or vessel, or by wagon alongside ship, give notice in writing (or by telephone, if so agreed in writing) of arrival to the consignee or, where his address is not known or he refuses to take delivery, to the sender where reasonable and practicable so to do.

Condition 15:

The transit shall (unless otherwise determined) be deemed to be at an end:

(a) In the case of merchandise to be delivered to the consignee's premises by a road vehicle of the Executive, when it is tendered at the place of delivery, as defined by Condition 13 hereof, within the customary hours of the Executive for delivery in the district or at such other times as may be agreed between the Executive and the trader.

(b) In the case of merchandise not to be delivered to the consignee's premises, or consigned to premises to which there is no serviceable road or adequate approach, or to be kept till called for, or awaiting order, at the expiration of one clear day after notice of arrival is given in writing (or by telephone if so agreed in writing) to or at the address of the consignee or, where the address of the consignee is not known, to or at the address of the sender, or where the addresses of both the sender and the consignee are not known at the expiration of one clear day after the arrival of the merchandise at the place to which it is consigned.

(c) In the case of merchandise to be carried to a siding or wharf not belonging to the Executive:

(i) When it is delivered on the siding or alongside the wharf, or at the place where, by arrangement, the trader takes delivery of the merchandise or

(ii) If the consignee is unable through no fault of the Executive, or is unwilling to take delivery, at the expiration of one clear day after the receipt by the consignee of notice in writing (or by telephone if so agreed in writing) that the Executive are ready and willing to deliver; or

(iii) If the consignee is prevented from taking delivery through the act or omission of the Executive when the cause which has prevented him from taking delivery has been removed and the merchandise is delivered in accordance with paragraph (c) (i) or on the expiration of one clear day after the receipt by the consignee of notice in writing (or by telephone if so agreed in writing) that the Executive is ready and willing to deliver.

Condition 16:

After the termination of the transit, as defined by Condition 15 hereof, unless

otherwise agreed in writing, the Executive will hold the merchandise as warehousemen, subject to the Executive's warehousing charges and conditions.

Provided that the Executive will not be liable for any loss, misdelivery, or detention of or damage to merchandise which has arrived at the destination station, wharf, or depot, and for which the Executive gives notice that it has no suitable accommodation, by whomsoever such loss, misdelivery, detention, or damage may be caused and whether occasioned by neglect or otherwise.

Condition 17:

The Executive's charges for carriage shall be payable by the sender without prejudice to the Executive's rights against the consignee or any other person. Provided that when the Executive does not require prepayment of the carriage charges and the merchandise is consigned carriage forward, the sender shall not be required to pay such charges unless the consignee fails to pay after reasonable demands have been made by the Executive for payment thereof.

Condition 18:

Merchandise delivered to the Executive will be received and held by them subject (a) to a lien for moneys due to them for the carriage of and other proper charges or expenses on or in connection with such merchandise, and (b) to a general lien for any moneys or charges due to them from the owners of such merchandise for any services rendered or accommodation provided in relation to the carriage or custody of merchandise, and in case any lien is not satisfied within a reasonable time from the date on which the Executive first gave notice of the exercise of its lien to the owners of the merchandise, the merchandise may be sold and the proceeds of sale applied in or towards the satisfaction of every such lien and all proper charges and expenses in relation thereto, and the Executive shall account to the owners of the merchandise for any surplus.

The general lien conferred by this condition shall not prejudice an unpaid vendor's right of stoppage *in transitu*.

Condition 19:

Where perishable merchandise:

(a) Is refused by the consignee.

(b) Is not to be carted by the Executive and is not taken away from the station, wharf, or depot of destination within a reasonable time after arrival.

(c) Is not addressed or labelled in accordance with condition 2 hereof.

(d) Is not delivered in consequence of riots, civil commotions, strikes, lockouts, stoppage, or restraint of labour from what ever cause, whether partial or general.

(e) Is not delivered in consequence of damage or obstruction to the railway, waterway or road caused by flood, landslide, weather, or otherwise where no reasonable alternative route is available—

the merchandise may be sold by the Executive and payment or tender of the proceeds of any such sale after deduction of all proper charges due on the merchandise and expenses in relation to the sale thereof shall (without prejudice to any claim or right which the sender or consignee may have against the Executive otherwise arising under these conditions) discharge the Executive from all liability in respect of such merchandise or the carriage or delivery thereof.

Provided that:—

(i) The Executive shall do what is reasonable to obtain the value of the merchandise.

(ii) Where the merchandise is not carried through to the destination to which it was consigned by the sender, the charges payable to the Executive shall be those in operation for the journey actually completed, but shall not exceed the charges for the full transit.

(iii) Where telegraphic or telephonic communication is reasonable and practicable, the power of sale shall not be exercised unless notice has been given to the consignee in cases under (b) and (e) and to the sender in cases under (a) or (c), and the consignee or sender has failed to give immediate instructions for disposal by telegraph, telephone, or by hand to the Executive at the station, wharf, or depot from which the notice was sent.

Condition 20:

Where merchandise (other than perishable):—

(a) Is held "To wait order" or "To be kept till called for" and such order is not given, or such merchandise is not removed within a reasonable time.

(b) Is of a description for which the Executive has not or does not provide accommodation at the place of destination.

(c) Is unclaimed and when the names and addresses of the sender and the consignee are not known and cannot be ascertained.

(d) Is refused by the consignee, or not delivered because the consignee is not known, and in either case the sender fails to take delivery, or to give instructions for disposal—the Executive may sell the same, either separately or by inclusion in a sale of unclaimed goods, and payment or tender of the proceeds of such sale, after deduction of all proper charges due on the merchandise and expenses in relation to the sale thereof shall (without prejudice to any claim or right which the sender or consignee may have against the Executive otherwise arising under these conditions) discharge the Executive from all liability in respect of such merchandise or the carriage or delivery thereof.

Provided that:—

(i) The Executive shall do what is reasonable to obtain the value of the merchandise.

(ii) Where the merchandise is not carried through to the destination to which it was consigned by the sender, the charges payable to the Executive shall be those in operation for the journey actually completed, but shall not exceed the charges for the full transit.

(iii) The power of sale shall not be exercised (a) where the name and address of the sender or the consignee is known unless the Executive shall have sent notice in writing by post or otherwise to the sender or consignee that the merchandise will be sold if not taken away within 14 days' or (b) where the names and addresses of the sender and consignee are not known, unless the Executive shall have retained the merchandise in their possession for not less than three months.

Condition 21:

The Executive shall not in any case be liable for:—

(a) Loss of a particular market, whether held daily or at intervals; or

(b) Indirect or consequential damages; or

(c) Subject to these conditions, loss, damage, or delay proved by the Executive to have been caused or to have arisen from:

(i) Insufficient or improper packing; or

(ii) Riots, civil commotions, strikes, lockouts, stoppage, or restraint of labour from whatever cause, whether partial or general; or

(iii) Consignee not taking or accepting delivery within a reasonable time.

Condition 22:

The Executive shall not incur liability of any kind in respect of merchandise where there has been fraud on the part of the trader.

Condition 23:

In the event of any loss of or damage or delay to merchandise arising from a defect in a wagon, vehicle, vessel, container, sheet, rope, or chain not belonging to or provided by the Executive, and on proof by the Executive that such loss, damage, or delay was not due to any negligence of the Executive or its servants, the Executive shall not be liable for:—

(a) Loss of or damage or delay to merchandise contained in such wagon, vehicle, vessel, or container, or covered by such sheet or secured by such rope or chain arising from any such defect, or

(b) Loss of or damage or delay to merchandise which may be suffered by the trader by whom such defective wagon, vehicle, vessel, container, sheet, rope, or chain is provided and results from such defect.

Condition 24:

Where loading or covering is performed by the sender, the Executive shall not be liable for loss of, or damage or delay to, merchandise so loaded or covered on proof by the Executive that such loss, damage, or delay would not have arisen but for faulty and/or improper loading or covering on the part of the sender. For the purpose of this condition, merchandise shall not be deemed to be loaded or covered in a faulty and/or improper manner if loaded or covered in the manner directed by the Executive.

Condition 25:

All merchandise is warranted by the sender not to be of a greater weight than that declared either orally or in the consignment not relating thereto, and, in the absence of written notice to the contrary given to the Executive at the time of delivery to them, all merchandise is (apart from the want of proper protection by packing in the case of damageable goods not properly protected by packing) further warranted by the sender:—

(a) To be fit to be carried or stored in the condition in which it is handed to the Executive; and

(b) Not to be merchandise included in the Dangerous Goods Classification or unclassified merchandise of a kindred character.

Condition 26:

Merchandise will be carried subject to any conditions of carriage included in the conditions and regulations in the Executive's General Classification of Merchandise. (This may require amplification according to regulations ultimately issued.)

Condition 27:

Where the Executive agrees to perform the service of collecting "paid on" charges it shall not be liable for failure to collect such charges in any case where, either before or after delivery, the person from whom such charges are to be collected fails to pay after reasonable demands have been made for payment thereof.

Condition 28:

The Executive shall not in any case be liable for loss, damage, delay, or mis-

delivery directly occasioned by the failure of the trader to comply with Conditions 2 and/or 3 hereof.

Condition 29:

Subject to these conditions, the rights and liabilities of the trader and the Executive respectively, whether at Common Law or under any Statute, shall remain unaffected.

Condition 30:

These conditions shall apply by whatever route or means the merchandise is carried.

Condition 31:

Any special conditions which may from time to time be settled by the Transport Tribunal in relation to the carriage of merchandise of a particular nature or description shall in respect of such merchandise prevail to the extent that such conditions are in conflict with any of these conditions.

Condition 32:

When a notice given in compliance with any of these conditions is sent by post, service thereof shall be deemed to be made by properly addressing, prepaying, and posting such notice, and, unless the contrary is proved, to have been effected at the time at which the notice should be delivered in the ordinary course of post.

Condition 33:

In the computation of time, where the period provided by these conditions is seven days or less, the following days shall not be included:

In England and Wales: Sunday, Good Friday, Christmas Day, or a Bank Holiday.

In Scotland: Sunday, January 1 and 2, Spring Holiday, Autumn Holiday.

Part II: Livestock Conditions

Terms and conditions of carriage of livestock (other than wild animals) by either the Railway Executive or the Road Haulage Executive.

Condition 1:

As for Condition 1, Part I.

Condition 2:

All livestock (accompanied where necessary by any certificate, licence or other document required by the Orders or Regulations of any Government Department or other authority) shall, where required by the Executive's addressing regulations settled by the Transport Tribunal, be addressed in accordance therewith, and shall, if required by the Executive, be consigned upon the Executive's form of consignment note on which shall be stated:

(a) The full names and addresses (including postal district) of the sender and the consignee.

(b) The station or place of destination.

(c) When not charged by weight, the number and description of the livestock, and in the case of overseas traffic their brands or marks.

(d) When charged by weight, the description and weight of the livestock (including crates, boxes or other packing).

(e) Whether (when the Executive do not require prepayment) the charges are to be paid by the sender or by the consignee.

(f) The value of each head of livestock when declared to be of higher

value than is mentioned in condition 4 hereof.

Condition 3:

When a person in charge of a consignment of livestock is permitted by the Executive to travel by the merchandise train or road vehicle or without payment of fare by the passenger train carrying the livestock, the sender shall state the name of such person in the space provided on the consignment note, and the person in charge shall, if required by the Executive, sign the declaration and agreement printed thereon, that he is such person in charge and that he relieves the Executive from all liability to himself or to his representatives for loss of life, personal injury, or delay, and for loss of or damage or delay to his property however caused.

Condition 4:

The Executive shall not be liable:

(a) For injury to a consignment or any part thereof except on proof by the trader that the same was occasioned in transit by the neglect or default of the Executive or its servants.

(b) For loss of or from a consignment proved by the trader to have been occasioned in transit, or for deviation, misdelivery, delay, or detention on proof by the Executive that such loss, deviation, misdelivery, delay, or detention was not occasioned by the neglect or default of the Executive or its servants.

Condition 5:

The Executive shall not in any case be liable beyond the following sums: for any horse £100; for any neat cattle per head £50; for any sheep, ass, mule, or pig £5; for any dog, deer, or goat £2; for any rabbit or other small quadruped 7s. 6d.; or for any head of poultry or other bird 7s. 6d.; unless a higher value be declared in writing at the time of delivery to the Executive and an increased charge over and above the charge for carriage be paid as compensation for the greater risk incurred, in which case the Executive will, subject to these conditions, accept liability for the loss actually sustained, not exceeding the amount so declared.

Condition 6:

As for Condition 9, Part I: for "merchandise" read "livestock."

Condition 7:

In the case of livestock consigned to a destination which entails transfer to an independent carrier which expression shall not include another Executive of the British Transport Commission or any contractor employed by the Executive:

(a) The Executive's obligations and liability, notwithstanding that the livestock may be addressed through to destination, or may be carried at a through rate, shall only relate or extend to those portions of the journey performed on the system of an Executive. The transit by the Executive shall (unless otherwise determined) be deemed to terminate where the journey is to be completed by any independent carrier, when the livestock is tendered or transferred to any such carrier, or shall be deemed to be suspended where the livestock is to be carried by any independent carrier for an intermediate portion only of the journey when the livestock is tendered to and not accepted by such carrier or, if so accepted, while it is in the possession of such carrier.

(b) The Executive and any succeeding carrier are authorised as agents for the sender or owner to contract for the further carriage upon the terms of any bill of lading or other conditions usually required by any succeeding carrier.

(c) The Executive shall not be liable for loss, injury, deviation, misdelivery, delay, or detention, except on proof that the same arose on the system of an Executive and that the Executive are liable therefor under these conditions.

Condition 8:

As for Condition 11, Part I.

Condition 9:

As for Condition 12, Part I.

Condition 10:

As for Condition 13, Part I.

Condition 11:

The transit shall (unless otherwise previously determined) be deemed to be at an end:

(a) In the case of livestock to be delivered to the consignee's premises by a road vehicle of the Executive, when it is tendered at the place of delivery, as defined by condition 10 hereof, within the customary hours of the Executive for delivery in the district or at such times as may be agreed between the Executive and the trader.

(b) In the case of livestock not to be delivered to the consignee's premises, as soon as a reasonable opportunity has been given by the Executive to the consignee to take delivery at the place to which the livestock is consigned, but shall in no case extend beyond 24 hours after the arrival of the livestock at such place.

Provided that where telegraphic or telephonic communication is reasonable and practicable and either the sender or consignee has requested the Executive in writing at his expense to advise the consignee of the arrival of the livestock the Executive shall give such telegraphic or telephonic advice to the consignee at the expense of the party making the request.

Condition 12:

After the termination of the transit, as defined by Condition 11 hereof, unless otherwise agreed in writing, the Executive will hold the livestock at the sole risk of the owner and subject (in addition to the charges for carriage) to reasonable charges for lairage or other accommodation or services.

Condition 13:

The Executive's charges for carriage and also any charges and expenses for the custody, care, or maintenance of the livestock, or for any other service performed, accommodation provided, or expenses incurred while the livestock remains in the possession of the Executive or its agents, shall be payable by the sender without prejudice to the Executive's rights against the consignee or any other person.

Provided that when the Executive does not require prepayment of the carriage charges and the livestock is consigned carriage forward, the sender shall not be required to pay such charges unless the consignee fails to pay after reasonable demands have been made by the Executive for payment thereof.

Condition 14:

As for Condition 18, Part I: for "merchandise" read "livestock."

Condition 15:

If any livestock:

(a) Is refused by the consignee; or

(b) Is not taken away from the station

or place of destination within a reasonable time after arrival; or

(c) Is not delivered in consequence of incorrect or insufficient address being shown on the consignment note or in consequence of incorrect or imperfect branding or marking and the sender is not known or declines to take delivery or to give instructions for disposal; or

(d) Is not delivered in consequence of riots, civil commotions, strikes, lockouts, stoppage, or restraint of labour from whatever cause, whether partial or general; or

(e) Is so injured in transit that having regard to all the circumstances it is reasonable to slaughter; or

(f) Dies in transit from any cause whatever; or

(g) Is not delivered in consequence of damage or obstruction to the railway or road caused by flood, landslide, weather, or otherwise where no reasonable alternative route is available—

the livestock or the carcasses of such livestock may be sold by the Executive and payment or tender of the proceeds of any such sale after deduction of all proper charges due on the livestock and expenses in relation to the sale thereof shall (without prejudice to any claim or right which the sender or consignee may have against the Executive otherwise arising under these conditions) discharge the Executive from all liability in respect of such livestock or the carriage or delivery thereof:—

Provided that:—

(i) The Executive shall do what is reasonable to obtain the value of the livestock, or the carcasses of such livestock.

(ii) Where the livestock is not carried through to the destination to which it was consigned by the sender, the charges payable to the Executive shall be those in operation for the journey actually completed, but shall not exceed the charges for the full transit.

(iii) Where telegraphic or telephonic communication is reasonable and practicable the power of sale shall not be exercised unless notice has been given to the consignee in cases under (b), (c), (f), or (g), and to the sender in cases under (a) or (c) and the consignee or sender has failed to give immediate instructions for disposal by telegraph, telephone, or by hand to the Executive at the station or depot from which the notice was sent.

Condition 16:

The Executive shall not in any case be liable for:—

(a) Failure to convey or to deliver livestock within any certain or definite time, or in time for any particular market (whether held daily or at intervals), show or exhibition; or

(b) Indirect or consequential damage; or

(c) Loss, injury, or delay proved by the Executive to have been caused by or to have arisen from:—

(i) Incorrect or imperfect branding or marking; or

(ii) Riots, civil commotions, strikes, lockouts, stoppage, or restraint of labour from whatever cause, whether partial or general; or

(iii) Consignee not taking or accepting delivery within a reasonable time; or

(iv) Failure of the sender to protect or secure any livestock; or

(v) Insufficiency or unsuitability of any article supplied by the sender for securing, protecting, or conveying any livestock; or

(vi) Incorrect selection or misdelivery of livestock occasioned by loading or unloading performed by the owner or his agent at any point of the transit.

Provided that as to sub-clauses (iii), (iv), (v), and (vi) the loss, injury, or delay is not proved to have been proximately caused by or to have proximately arisen from negligence or default on the part of the Executive or its servants.

Condition 17:

The Executive shall not in any case be liable for loss, injury, or delay caused by or arising from:—

(a) The overloading of a vehicle or one animal injuring another in cases where the owner or his agent loads as many animals in such vehicle as he considers may be carried with safety.

(b) The penning, stabling, or loading together of animals of different classes or sexes when such loss, injury, or delay is not caused by the neglect or default of the Executive or its servants.

(c) The loading of animals loose at the request of the owner or his agent.

Condition 18:

Save and except as is provided by Statute, Statutory Order, Statutory Instrument, or Regulation, the Executive shall be under no obligation to feed or water livestock whilst in its possession or custody unless by special request and agreement; but the Executive may, in the absence of such request and agreement, feed or water livestock if in the opinion of the Executive it is reasonable so to do, without incurring (in the absence of wilful misconduct) liability for any consequences thereof.

Condition 19:

Nothing in these conditions shall deprive the Executive of any warranty implied in law as to the fitness of livestock for carriage in the ordinary way.

Condition 20:

Livestock will be carried subject to any conditions of carriage included in the conditions and regulations in the Executive's classification of merchandise. (This may require amplification according to the regulations ultimately issued.)

Conditions 21-25:

As for Conditions 27-30 and 32, Part I.

Condition 26:

In these conditions the word "injury" includes fatal injury.

Repairs to Bopeep Tunnel, Southern Region

(Concluded from page 738)

and Crowhurst, have been suspended. Trains from London to Hastings, via Tunbridge Wells, have been diverted from Crowhurst to Bexhill (West) and the services from London and Brighton, via Lewes, are terminating at St. Leonards (West Marina). Special bus services are in operation between Hastings and Crowhurst, and Hastings and West Marina.

The air compressors for the pneumatic drills have been placed outside the western portal, and advantage has been taken of the temporary closing of West St. Leonards Station to establish the concrete mixers on the up platform. Specially constructed standard-gauge trailers, hauled by a petrol-engine trolley, are used to carry materials into the tunnel, and to remove the excavated soil to a tip a short distance beyond the station. Electric lighting, for which current is drawn from the public supply, has been installed in the affected portion of the tunnel.

Belfast & County Down Railway

Tribunal authorises withdrawal of train services except between Belfast and Bangor

The Northern Ireland Transport Tribunal has authorised the Transport Authority to discontinue all services on the Belfast & County Down Railway except on the Bangor line. This decision was announced in Belfast, on December 15, by Sir Anthony Babington, Chairman of the Tribunal. Later, the Transport Authority announced that the railway services would be withdrawn from the Comber and Newcastle, Ballynahinch Junction and Ballynahinch, and Downpatrick and Ardglass sections of the line on January 16, and that the Belfast—Donaghadee services would be withdrawn later.

The matter came before the Tribunal as the result of an application by the Ulster Transport Authority under Section 37 of the Transport Act (Northern Ireland), 1948, and in giving its decision the Tribunal states that the discontinuance of the railway and the substitution of road services would result in an estimated net annual economy of approximately £150,000. The Authority had made out a good case on general financial grounds for terminating the services on the main line.

The objection that the additional buses and lorries required to carry the railway traffic would congest the roads was not established and the Tribunal were of the opinion that the authority could cope adequately with such organised parties or excursion traffic as might be offered. In general the figures indicated that the suggested number of additional buses (42) should be able to cope with the available traffic formerly carried by rail.

In 1921 there were 6,577 motor vehicles in Northern Ireland as compared with 74,446 in 1948. If petrol rationing were relaxed, the number of private cars and lorries would show a further increase, and the Tribunal thought it impossible to say that public transport had even now experienced the full force of the transport revolution.

They could assume that this year the Authority would show an overall deficit of £300,000 made up of an estimated loss of £120,000 plus the interest on the present capital of £180,000. The overall profit of £30,000 for the year to September 30, 1948, was arrived at only after allowing for a loss of £128,000 on the railway system. Similarly, the estimates for the 11 months to August 31, 1949, included an estimated loss for the railway of £184,000, so that the influence of the railway on the overall financial structure of the authority was very marked. Neither did the 1948 figures fully reflect wage increases.

The report goes on: "Having heard the evidence of Mr. A. Morrison, Chief Officer of the Ulster Transport Authority, Major F. A. Pope, Chairman of the Authority, and Mr. John Elliot, Chief Regional Officer, Southern Region, British Railways, we are of opinion that a good case has been made out on general financial grounds for terminating the services on the main line, and that we must grant the order applied for unless it can be shown that there is some alternative way of reorganising the railway services which will restore them as a profit-making concern, or at any rate reduce their losses to a figure which would not unduly react to the detriment of the public who do not use the railway, and therefore warrant their retention."

Statistics showed that the relative stability of the railway traffic, as measured in passengers and goods, suggested that the

main increase in road traffic since 1936 in County Down must be new traffic, and that the recent serious deteriorations in the financial status of the railway were due more to the increase in operating costs than to loss of traffic. The cost of carrying passengers and goods on the main line in 1948 was £279,000, whereas the Authority estimated the cost of handling the same traffic on the roads at £127,000, and Mr. Morrison had taken £150,000 as a safe estimate of saving which would result from the closing of the line.

Dealing with the objections of the Down County Council, the report states that, substantially, the case was that by the provision of a supplementary system of diesel railcars, coupled with a transfer of a sufficient number of passengers from road to rail, the railway could be made to pay its way, and that, though it was within the powers of the Authority to adopt that solution, it had deliberately failed to do so, or to experiment with it, but continued to develop road services at the expense of the railway as a matter of policy.

Midland Railway of Western Australia Ltd.

Increased receipts due to rail increases insufficient to offset rising wages and costs

The annual general meeting of the Midland Railway Co. of Western Australia Ltd. was held in London on December 15. Mr. Robert W. Adeane, Chairman, presided.

Mr. Adeane said that gross receipts (road and rail together) increased by £44,095. The rail increase of £31,951 was due to the increase accorded in their rates, which more than set off the decrease in tonnage carried, but which would not suffice to offset the ever-increasing rise in wages and costs. Wages alone had risen by £15,500 per annum since July, 1948.

The increase of £12,144 from their road services was due to the extension of these services, on which they had spent, and were spending, large capital sums, and which were well patronised by the public. Their road services were taking passenger traffic away from their railway, and rail passenger receipts had now fallen very low, but traffic could not be held by the railway except at prohibitive costs in running faster trains, and if they did not carry the passengers by road, somebody else would.

Working Expenses.—Working expenses increased by £31,591. The railway portion of this increase was £22,087, and of this the largest item was the increased cost of the locomotive department. The cost of road services increased by £9,504, due to the extension of services and improved facilities. Net receipts increased by £12,504, and the ratio of working expenses to receipts rose from 64.5 to 65.6 per cent.

Renewals.—£55,246 was expended during the year, slightly more than the annual allocation decided on in 1947. In the two previous years, however, material shortages made it impossible to do all the work required to make up for wartime wear and tear; and the cost of labour and material required for renewals had increased. In the current year an even larger expenditure might be necessary.

The Tribunal drew the conclusion that the introduction of a diesel railcar service as outlined would necessitate the present figure of just over 2,000,000 passengers by rail being increased to nearly 6,000,000 before such a service would be comparable in financial results to the proposed substituted road services. Such a transfer from road to rail was beyond the bounds of practical possibility.

The question of compensation to employees was not one for the Tribunal, and the Authority would do all it could to mitigate any hardships that might result. The report lays down no conditions as to how the closing down of the line is to be effected nor as to the time within which its services are to be terminated. The Authority must first put an adequate alternative road service into operation.

Mr. J. M. Andrews, M.P. and a former Prime Minister, commenting on the Tribunal findings, said that he intended to confer with other Members for County Down through whose constituencies the railway ran, to see what steps might be taken to prevent such a course being adopted, which would be detrimental to the general welfare, including road safety and the interests of the railwaymen who would lose their present employment.

Capital Expenditure.—They were satisfied that expenditure of £8,207 on railway account and £11,448 on road account was for minimum requirements. The financing of this expenditure, in view of the fact that their capital account was heavily over-expanded, was causing concern.

Mungedar Pastoral Co. Ltd.—The first dividend in the history of the company was paid, of 20 per cent., and a 50 per cent. return of capital. Since the end of the year, the Irwin River Station had been sold and the balance of capital repaid.

Beam Transport Company.—The company continued to do well and again paid 8 per cent. dividend on its ordinary capital. Their investment was increased by £11,454 in the form of preference shares during the year.

Land Sales.—167,444 acres were sold for £50,145, leaving 354,252 acres unsold. Only some of the remaining land was of value.

Traffic.—Tonnage of wheat carried was less by 16.1 per cent. and that of goods and livestock by 5.1 per cent. The fall in passenger traffic was best illustrated by comparison with 1943, in which year 165,000 passengers were carried for £112,000; last year, 22,000 passengers were carried for £22,000.

Debentures.—Of the 4½ per cent. first mortgage debenture stock, £18,000 was redeemed during the year, leaving £32,611 outstanding. The second mortgage debenture stock, after the recent payment of 18 months' interest, was two years, namely, £47,389 gross, in arrears.

Crop Prospects.—Prospects were of a reasonably good harvest. The rains came late, but the wheat crop in their zone might be some 60,000 tons, or some 10 per cent. higher than last year.

The rise in working expenses gave cause for concern, and much would depend on whether the Australian Government Railways increased their rates or not.

The report and accounts were adopted.

Convention on Electric Railway Traction

The Traction Technical Committee of the Institution of Electrical Engineers, acting on behalf of the Council, and in collaboration with members and others professionally engaged with British Railways and industry, has arranged a convention on electric railway traction to be held in London from March 20-23, 1950. The convention will comprise an opening meeting and six technical sessions. Papers have been specially written for the occasion and have been arranged in groups to ensure co-ordinated discussions.

At the opening meeting, at which the opening speaker will be Sir Cyril Hurcomb, Chairman of the British Transport Commission, and in technical Session 2, a review of railway electrification will be presented, in which both the practice of British Railways and London Transport will be covered. This session will include a paper on the electrical equipment recently installed on the Liverpool Street-Shenfield line and conclude with a general review of the achievements of British engineering in overseas railway electrification.

In subsequent sessions more detailed aspects of the subject will be introduced. The effect of electric traction on the track, the spacing of sub-stations, the tractive resistance of electric trains, and the operation of multiple unit trains will be presented in Session 3. Six papers in Session 4 will cover fixed equipment, and will include overhead and conductor rail systems, substations, collector gear, and lightning protection.

The fifth technical session will be devoted entirely to locomotives and coaches, and the papers will describe British main-line electric locomotives, diesel-electric locomotives, and modern lightweight motor coaches. Papers in the sixth session will include control and auxiliary equipment in d.c. electric locomotives and motor coach trains, electric and electro-pneumatic brakes, power operated doors, and electric coach lighting and heating.

The concluding session will be devoted to the design of traction motors and the maintenance of electric and diesel-electric equipment, and will also cover operating experience with the electrical equipment of diesel-electric motor coach trains. The opening lecture, together with the 30 papers which are to be presented at the convention, with the discussions, will subsequently be published in a special issue of the proceedings of the Institution of Electrical Engineers.

The programme is as follows:—

Monday, March 20, 5.30 p.m. Session 1.
Opening Meeting.

Chairman: The President of the Institution; Opening Speaker: Sir Cyril Hurcomb. C. M. Cock (Chief Electrical Engineer, Railway Executive): "Railway Electrification in Great Britain."

Tuesday, March 21, 2.30 p.m. Session 2.
Review of Electric Railway Traction.

T. S. Pick (Electrical Engineer) and R. Dell (Signal Engineer, London Transport Executive): "Review of London Transport Railway Practice"; H. H. Swift (Acting Electrical Engineer, Eastern and North Eastern Regions, British Railways): "Liverpool Street-Shenfield Electrification"; E. T. Hippisley (British Thomson-Houston Co. Ltd.): "Achievements of British Engineering in Overseas Railway Electrification"; R. Dugas (Chef du Service Technique de la Direction, S.N.C.F.): "Review of Electric Traction in France."

Tuesday, March 21, 5.30 p.m. Session 3.
Project Considerations.

F. G. Johansen (lately Deputy Scientific Research Manager, London Midland Region, British Railways): "Effect of Electric Traction on the Track"; W. J. Webb (Assistant for Power Supply (New Works), Southern Region, British Railways): "Spacing of Sub-stations"; W. S. Graft-Baker (Chief Mechanical Engineer (Railways), London Transport Executive): "Multiple-Unit Trains"; F. Lydall (Messrs. Merz & McLellan): "Tractive Resistance of Electric Trains."

Wednesday, March 22, 2.30 p.m. Session 4.
Equipment.

F. B. Kitchin and J. Holland (British Insulated Callenders Cables Limited): "Overhead Equipment Design"; H. P. Colwell (Chief Electrical Engineer, Victorian Railways): "Maintenance of Overhead Equipment"; C. A. Craig and M. E. Constant (Southern Region, British Railways): "Conductor Rail Installation and Maintenance; Collector Gear for Conductor Rail"; W. L. King (Assistant Chief Electrical Engineer (Maintenance), South African Railways): "Lightning Protection of the South African Electrified Railways"; S. B. Warder (Mechanical & Electrical Engineer, Southern Region, British Railways): "Traction Substations: Their General Layout, Operation and Maintenance"; A. J. Gosling (South African Railways): "The 3,000-V. Traction Substations of the South African Railways."

Wednesday, March 22, 5.30 p.m. Session 5.
Locomotives and Coaches.

W. J. A. Sykes (Assistant Electrical Engineer, Southern Region, British Railways): "Electric Locomotives of the British Railways"; F. A. Harper (late Electric Traction Assistant to Chief Mechanical Engineer, London Midland Region): "Diesel-Electric Locomotives of the British Railways"; E. S. Cox (Executive Officer (Design), Railway Executive): "Mechanical Design of Electric and Diesel-Electric Locomotives"; F. W. Sinclair (Gloucester Railway Carriage & Wagon Co. Ltd.) and S. C. Lyon (General Electric Co. Ltd.): "Mechanical Design of Modern Motor Coaches (particularly Lightweight Design)."

Thursday, March 23, 2.30 p.m. Session 6.
Control and Auxiliary Equipment.

R. Brooks (Metropolitan-Vickers Electrical Co. Ltd.): "Control and Auxiliary Equipment for Direct-Current Electric Locomotives"; E. T. Hippisley and F. E. Butler: "Control Gear and Auxiliary Machines for Multiple-Unit Electric Trains"; R. I. D. Arthurton (London Transport Executive): "Power-Operated Doors"; H. R. Broadbent (London Transport Executive): "Electro-Pneumatic Brakes"; J. W. Grieve: "Electric Coach Lighting and Heating"; P. L. Mardis and W. G. Jowett: "The Electrical Equipment of Diesel-Electric Locomotives and Motor-Coach Trains"; F. Whyman (Metropolitan-Vickers Electrical Co. Ltd.): "Electric Braking Systems."

Thursday, March 23, 5.30 p.m. Session 7.
Design and Maintenance of Stock.

G. H. Fletcher and E. A. Binney (Metropolitan-Vickers Electrical Co. Ltd.): "Features of Modern Traction Motors and Gearing (Mechanical and Electrical)"; David McKenna (Rolling Stock Superintendent (Railways), London Transport Executive): "Running Attention to Electric Rolling Stock"; H. H. C. Barton (Messrs. Merz & McLellan): "The Maintenance of Electric Rolling Stock"; F. A. Harper: "Maintenance of Diesel-Electric Equipment"; L. C. Woodhouse: "Operating Experience with the Electrical Equipment of Diesel-Electric Motor-Coach Trains."

CANADIAN PACIFIC RAILWAY DIVIDEND.
—At a meeting of the directors held in Montreal on December 12, a final dividend of 2 per cent. on the preference stock in respect of the year 1949 was declared payable on February 1, 1950.

Staff & Labour Matters

T.U.C. Wages Policy

The T.U.C. special economic committee discussed on December 13 and 14 the suspension of cost-of-living sliding-scale agreements with the unions concerned.

The R.C.A. has announced that because of the recommendations of the T.U.C. General Council it cannot support the N.U.R. claim for an increase for lower-paid railwaymen; it was influenced no doubt by its acceptance of the findings of the Board of Conciliation, which recommended last August that the claim for an increase for salaried and conciliation staff should be declined. The A.S.L.E.&F. had already refused to support the N.U.R. claim. At the time of going to press the Railway Executive has not received any official application from the N.U.R. for the increase for lower-paid workers.

The T.&G.W.U. has decided to back the T.U.C. wage policy. The Municipal & General Workers' Union had already announced their agreement. Scottish miners have rejected the T.U.C. appeal and have instructed their delegates at the special national conference of mineworkers on January 11 to press the claim for the lower-paid workers and to call on the National Executive to speed up negotiations and to hold a ballot to ascertain the miners' attitude.

In the December issue of the T.U.C. magazine *Labour* it is stated: "In framing their recommendations the special economic committee and the General Council left out of consideration no factor which had the slightest bearing on the economic well-being of the workers. No avoidable sacrifices have been proposed, and all possible safeguards have been devised to protect the working-class community against a lowering of the standard of living to anything approaching a dangerous degree. The T.U.C. has by no means overlooked the need for those constructive measures best calculated to relieve the economic necessities of the nation. The General Secretary of the T.U.C. made it clear to a press conference that the campaign for increased productivity was being prosecuted with more and more vigour. This is the more important, because the recommendations of the T.U.C. aim at stabilising wage rates, and not earnings, which will be dependent on increased productivity."

CORDOBA CENTRAL TRUST LIMITED.—The report of the directors, submitted with the accounts for the year ended June 30, 1949, shows a gross income for the year of £10,519, with expenses in London and Buenos Aires, including taxation, of £12,716. In accordance with the power conferred by a general meeting of the B debenture stockholders on October 11, 1944, a second part-repayment of the B debenture stock capital was effected as on June 15, 1949, to the extent of 50 per cent. of such stock then held by each holder. No decision had been reached in the more important lawsuits instituted against the company in the Argentine, which precluded any estimation of the balance available for repayment to B debenture stockholders. The first part redemption of the B debenture stock made on March 1, 1945, and the further repayment recently effected, were together equivalent to the redemption at part of 82½ per cent. of the original B debenture stock capital. The amount of B debenture stock outstanding was thus reduced to some £320,000.

Notes and News

Japanese Freight Rates Increase.—A Reuter report states that the Japanese Government has announced that railway freight rates will be increased by 80 per cent. as from January 1 next.

Draughtsman Designer Required.—A draughtsman designer, experienced in locomotive or diesel work, is required by an engineering firm near Stockport. See Official Notices on page 751.

Venezuelan Railway Talks.—The directors of the La Guaira & Caracas Railway Company and the Bolivar Railway Company announce that negotiations for the sale of the undertakings have been renewed. The directors advise stockholders not to deal with their securities until a further statement is issued.

"Golden Arrow" Collision Inquiry.—On December 20, Lt.-Colonel G. R. S. Wilson, Chief Inspecting Officer of Railways, Ministry of Transport, opened an inquiry into the collision between the "Golden Arrow" boat train and a light engine. The accident, which took place outside Victoria Station, Southern Region, on December 9, was referred to on page 717 of our December 16 issue.

Scottish Region Christmas and New Year Services.—During the Christmas and New Year holidays 71 additional Anglo-Scottish express trains are being run by the Scottish Region. Thirty-five of the special trains are to leave Edinburgh (Waverley) for Newcastle and other points on the East Coast route; 20 will start from Glasgow (Central) for Liverpool, Manchester, Birmingham and London, and 16 from Glasgow (St. Enoch) for the West Riding of Yorkshire and the Midlands. There will also be additional through services to England from Aberdeen and Dundee. For journeys within Scotland, approximately 105 additional main-line

trains will run during the holidays. On Christmas Day normal main-line and local Sunday services will be maintained, but there will be certain modifications in the through services to and from England. On December 24, 26 and 31, and January 2 and 3, certain local train services in Scotland will be subject to alteration, or suspension.

Elgin-Forres Line Temporarily Closed.—Following the derailment of nine wagons of the 4.45 a.m. goods train from Keith, Scottish Region, between Elgin and Forres, on December 13, the line was temporarily closed. The Mosstown Canal had flooded a burn which flows under the line in a culvert and is thought to have weakened the formation. The line was reopened at 4 p.m. on December 14.

Stewarts and Lloyds of South Africa.—The net profit for the year ended June 30 last amounted to £406,459, against £434,823 last year, and £138,407, against £87,175 was brought in. General reserve receives £200,000 as before and stock reserve £50,000, against £66,091. The ordinary dividend is maintained at 10 per cent. on the increased capital, leaving £136,366 to go forward.

Issue of Original Permits.—At a meeting held in London recently, Mr. R. Morton Mitchell, Chief Executive Officer, R.H.A., stated that the Road Haulage Executive would shortly begin to issue original permits, in accordance with Section 53 of the Transport Act, 1947, and that all applications would be dealt with by the end of January. Difficulties had been encountered, however, in notifying all the persons concerned at approximately the same time, particularly in view of the rights which accrue to hauliers once they have received official notification of a decision in regard to their original permit applications. It was proposed to stagger the issue of original per-

mits over some three months, and it had been decided to issue original permits in the first instance only where the permit would be dated March 1, 1950. Other cases, in which original permits would run either from April 1 or May 1, 1950, would be covered at present by the despatch of an informal letter advising the applicant what decision he could anticipate.

Record Coal Traffic.—During last week 335,616 wagons of coal class traffic were forwarded by British Railways from collieries to ports, power stations, and coal yards. This is the highest figure recorded since the war.

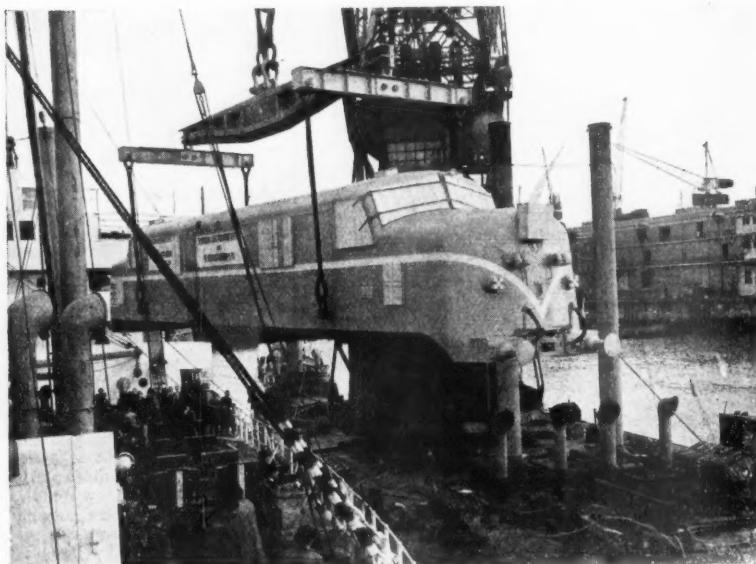
British Railways London Commercial Service Christmas Party.—Mr. W. H. Vine, Chief London Commercial Representative, and members of the British Railways London Commercial Service gave a Christmas party on December 21 at 2 & 4, Little Britain, E.C.1. The premises were kindly lent by Messrs. B. Norman & Son, and a large number of representatives of British Railways and of traders was present.

Tube Investments Limited.—The aggregate trading profits of Tube Investments Limited for the year ending July 30 amounted to £4,840,467 (£5,042,521 for the preceding year) after providing £1,078,782 (£1,126,513) for depreciation on fixed assets as revalued in 1948. After allowing for taxation, the net profit was £2,064,075 (£2,071,200). A final dividend is recommended on ordinary stock of 12½ per cent. actual, less income tax, making 25 per cent., less tax, and at the same rate relatively on the liaison ordinary shares, also dividends on the 7 per cent. first preference stock and the 7 per cent. second preference stock to be paid at authorised rates. The annual general meeting was held on December 14.

Buses to Replace Trams at Gateshead.—The Gateshead & District Tramways Company and the Newcastle Corporation are proposing, after consulting Gateshead Corporation and Felling Urban District Council and subject to road service licences being obtained, to replace trams with motor buses on their joint through services between Newcastle and the districts of Gateshead, Felling, and Dunston. It is intended to maintain the joint advisory committee which has functioned since 1938 and on which representatives of the two authorities and the company meet to discuss traffic problems. The Gateshead company, which was incorporated by Act of Parliament in 1880, is now the only non-municipal tramway undertaking in England. It operates seven services in Gateshead and district covering 12½ miles of route.

Grand Union Canal.—The final accounts of the Grand Union Canal Co. Ltd., which was vested in the British Transport Commission as from January 1, 1948, cover 1947. Profits for the year were £58,750, as compared with £59,406 for 1946, which, with undistributed profits of 1946 and adjustments for sinking fund appropriations made £82,158. A 6 per cent. preference dividend absorbing £13,200 (same) and a capital stock dividend of 2·8 per cent. (2 per cent. for 1946) requiring £33,368 (£23,755) may be distributed under the provisions of the Transport Act, 1947, and the balance of £35,590—equal to 3 per cent. on the capital stock—passes to the B.T.C. The Chairman, Mr. John Miller, stated that the board had aimed at a record dividend out of earnings for the final two-year

Main-Line Electric Locomotive for Brazil



Loading the first of fifteen 3,000-h.p. electric locomotives for the former San Paulo Railway on to a ship at Liverpool. An illustrated article on these locomotives, designed by The English Electric Co. Ltd. and the Vulcan Foundry Limited, appeared in our November 4 issue

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Employment Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

DRAUGHTSMAN DESIGNER required by small engineering firm near Stockport. One experienced in locomotive or diesel work preferred. Salary £500. State age and full details of experience to Box 562, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY SIGNALLING AND COMMUNICATIONS INSTALLATION AND MAINTENANCE. A practical guide, especially intended to help Signal Inspectors, Installers, Fitters, Linemen, Draughtsmen, and all concerned with installing and maintaining Signal, Telegraph, and Telephone Equipment. 416 pp. Many illustrations. Cloth. 8s. By post 8s. 6d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

TRAFFIC MANAGER required by The Steel Company of Wales Limited, Steel Division, Port Talbot. Previous experience in operating traffic essential. Salary according to qualifications. Apply, stating experience, and salary required, to the Superintendent, Personnel Services, P.O. Box No. 9, Port Talbot, Glam.

THE RAILWAY SYSTEM OF JAMAICA. A general description of the system and its traffics, with an account of economic problems; the motive power used; and some features of operation. By H. R. Fox, B.Sc., M.Inst.C.E., General Manager, Jamaica Government Railway. Reprinted from *The Railway Gazette*, January 5 and 12, 1948. Price 1s. Post free 1s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE FIRST PASSENGER RAILWAY. By Charles E. Lee. A history of the Swansea & Mumbles Railway, which extends over 136 years. Cloth. 8½ in. by 5½ in. 91 pp. Illustrated. 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

FACTORY possessing machine tools to the value of £1,000,000, is desirous of selling entire plant, either in bulk lots or as individual items. Machines of all types offered. Quick sale is essential for accommodation reasons. Only enquiries for specific machines replied to.—Box 558, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

FULLY qualified Bogie Designer with experience in all forms of locomotive and rolling stock bogies, and in particular motor bogies. Permanent and progressive position to suitable applicant. Particulars of training and experience with salary required to Box 548, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

STANDARD MILITARY RAILWAY BRIDGES. By F. S. Bond. A description of the different types of bridges designed for rapid erection in the field by the Allied Forces, and of the various methods employed in such erection. 28 pages. 9 in. by 12 in. fully illustrated. Paper cover, 5s. By post 5s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

period 1946-47, and but for the provisions of the Transport Act would have been able to declare a final dividend of 5.8 per cent. Strong representations were made to the Minister of Transport without success.

Nurseries on West German Trains.—An agency message states that trains running between Hamburg and Stuttgart include special coaches containing nurseries and radio sets. They can be used by paying 0.50 marks (about 10d.) supplement.

Mexican Railway Debt Plan.—The agreement dated February 20, 1946, for adjusting the debt of the National Railways of Mexico, as modified by an amendment dated November 24, 1949, will be declared operative shortly.

Dean & Dawson Limited Office Addresses Altered.—Dean & Dawson Limited states that the lease of its premises at 37, Eldon Street, Barnsley, having expired, the office has been transferred to 5, Regent Street South, Barnsley. The telephone number remains unchanged. As Blandford Square, London, N.W.1, is being renamed, as from January 1, 1950, the address of the Accountant & Publicity Department of Dean & Dawson Limited will be amended to 7, Melbury Terrace, London, N.W.1.

Bolivar Railway Co. Ltd.—The report for the year ending December 31, 1948, states that as a result of the company being unable to pay the increased wages demanded by the workmen after frequent strikes, the Venezuelan Government in June and October, 1948, arbitrarily took over the administration and operation of the railway for account of the company. The necessary steps to protect the interests of the company in Venezuela had been taken, and a formal and categorical reserve of its rights made, protesting against the seizure of its properties and the interference in the administration of them. Gross receipts were Bolivares 564,525 (Bs. 1,289,825 in 1947) and working expenses were Bs. 752,619 (Bs. 1,440,752). These amounts do not include results of the railway whilst operated by the Venezuelan Government. The debenture stockholders, under the moratorium scheme sanctioned in June, 1948, agreed to postpone until January 1, 1949, obligations during 1948 as to interest and any sinking fund in respect of the "A" and "B" debenture stocks with power, subsequently exercised by a debenture stockholders' committee constituted under the scheme, to postpone those obligations until January 1, 1950, and the similar obligations of the company in respect of 1949. The scheme further provided for

the creation of £10,000 prior lien debenture stock ranking in priority to all existing stocks, carrying interest at 5 per cent. per annum and redeemable at a premium of 20 per cent. on March 31, 1958, or earlier at the option of the company at one month's notice; £8,000 of the prior lien debenture stock had been subscribed and issued at par and £2,000 lodged as collateral security for a loan. The annual general meeting was held on December 22.

Conference of Australasian Railway Commissioners.—A conference of railway commissioners from all the Australian States and New Zealand will be held in Wellington in February, 1951. The conference will be preceded by a general officers' conference, which will be held in Wellington in October, 1950. The commissioners' conference covers membership from the Australian States and New Zealand and has been established for more than 50 years. New Zealand has been a member almost since its inception.

Transfer of Pickfords and Hay's Wharf Cartage Co. Ltd. to R.H.E.—As a matter of administrative convenience the Road Haulage Executive in the early stages of its organisation operated through the medium of limited liability companies. The company structure has already largely disappeared, and the last remaining companies dealing with specialised traffics will be merged into the organisation on January 1, 1950. The companies to be merged include the Pickford and Hay's Wharf Cartage group, the trade names of which will continue to be used in association with the R.H.E. general trading title "British Road Services."

United Steel Companies.—Presiding at the annual general meeting of the United Steel Companies Limited, whose results were given in our November 11 issue, the Chairman, Sir Walter Benton Jones, said that, despite the change in market conditions, there was no general decline in the demand for steel products. The company did not depend on specialities and supplied steel in many forms. They were unalterably opposed to the nationalisation of steel as being part of a harmful policy of unlimited nationalisation of industries which involved confiscation of private property. Although the Steel Bill was to be amended and nationalisation postponed, the price of the amendment was the placing of the Act on the Statute Book, where it would remain unless removed by the next Parliament. The steel industry had stepped up output without strikes, development schemes had pro-

gressed as fast as circumstances allowed, and the industry had observed Government requirements in matters of distribution and price.

Loan for Iraq Railways.—A Reuter message from Baghdad states that the Iraqi Minister of Finance announced on December 18 the conclusion of Anglo-Iraqi financial talks on the raising of a £3,000,000 loan for major schemes to be undertaken by the State Railways. An agreement was signed.

Liverpool Overhead Traffics.—With the exception of the week ended November 13, there were further declines in traffics of the Liverpool Overhead Railway for November. Receipts at £2,474 and £2,512 were down by £370 and £369, respectively, in the weeks ended November 6 and 27, though for November 13 there was a £118 improvement to £2,841. Aggregate traffics to date are £4,805 lower than for the equivalent period of 1948 and amount to £127,348.

Peruvian Corporation Plan Modified.—The Peruvian Corporation announces that the debenture scheme prolonging until December 31, 1951, a moratorium which had existed between the company and first mortgage debenture holders since 1933, has been sanctioned by the High Court subject to certain modifications assented to by the corporation. The modifications are: (1) No person shall in future be appointed a member of the debenture holders' committee if he holds any preference or ordinary stock of the corporation; and (2) the maximum further period from December 31, 1951, by which the moratorium may be extended by the committee is reduced to one year (instead of two years) and such power of extension is only to be exercisable if the majority of the members of the committee at the time of such exercise are persons who do not hold any of the corporation's preference or ordinary stock.

Road & Rail Congress at Essen.—At the Road & Rail Congress at Essen, which was held on September 16 and 17, the subject chiefly discussed was the relationship of road and rail, and the consensus of opinion was that the railways have not ceased, and are not likely to cease, to play the leading part in passenger and goods transport, provided a thorough modernisation of installations and operation is carried out. For passenger traffic light and fast railcar units are likely to be an economic proposition. The railways should gradually cede the uneconomic small goods traffic to road

transport. Electric traction was discussed in connection with a paper read by Dr. Thelander, of the Swedish State Railways. A well-known expert on urban transport, Dr. Kremer, Hanover, pleads for short tramway tunnels across the centres of medium-size towns, where underground railways would not be an economic proposition.

Closing of Stations.—As from Monday, January 2, the following stations on the London Midland Region will be closed to passengers and passenger train traffic: Fiddlers Ferry (near Warrington), and Wixford (between Redditch and Broom Junction). Wixford Station will also be closed for goods traffic. The passenger services on the branch from Colwich to Stone, which were withdrawn temporarily on January 6, 1947, will not be restored. On the Scottish Region, the passenger services on the branch from Kintail to Alford will be withdrawn on January 2.

Southern Region Lecture & Debating Society.—On Saturday, December 10, a party of 46 members of British Railways, Southern Region, Lecture & Debating Society, visited the Eastern Region Liverpool Street to Shenfield electrification. Under the guidance of officers of the electrical and operating departments of the Eastern Region, the party visited the new signalboxes at Liverpool Street and Stratford. Maryland substation, and the car depot at Ilford, including the carriage cleaning sheds and washing plant, as well as the repair bays. A special train was used to convey the party on the outward journey.

London Midland Region (London) Orchestral Society.—Some outstanding performances by young artists characterised the London Midland Region (London) Orchestral Society concert at Euston on December 16. The orchestra, leader George Elmitt, was under its honorary conductor, John Grindley, with Percival Garratt as accompanist. Pauline Elmitt brought a wealth of feeling, as well as a high standard of technical proficiency, to her performance of the first movement of Violin Concerto No. 3 by Mozart and later in the programme was ably followed by her sister, Mavis Elmitt, in Grieg's pianoforte concerto, third movement. Apart from the high standard set by the orchestral part of the concert, there was some sustained and expressive work by twelve voices from St. Mary-of-the-Angels song school, which had its origin near Euston Station; the singing was of such competence that it would be invidious to choose between soloists and chorus. The concert closed with three popular carols, in which both choir and audience participated.

Forthcoming Meetings

December 30 (Fri.).—Institution of Civil Engineers, Great George Street, London, S.W.1, at 3 p.m. Christmas lectures for boys: "The Wonders of Big Bridges," by Mr. H. Shirley Smith.
January 2 (Mon.).—Institution of Civil Engineers, Great George Street, London, S.W.1, at 3 p.m. Christmas lectures for boys: "The Building of Dams," by Mr. C. W. Knight.
January 2 (Mon.).—Institute of Transport, Metropolitan Section, at Livingstone House, Broadway, London, S.W.1, at 5.30 for 6 p.m. "Transport 1900-1950," by Mr. C. E. R. Sherrington, Secretary, Railway Research Service.

Railway Stock Market

Although business contracted, with the holiday pending, and British Funds reflected moderate selling of long-dated stocks, markets generally have been firm with further improvement in the industrial sections. This was due partly to the view that yields on industrial shares are attractive, and that higher prices for leading industrial shares would be justified if British Funds maintain current levels. The return on British Funds determines the yield structure of markets generally; and although it is still uncertain if Gilt-edged will go to better levels over the next few months, there is a growing assumption of further official support for the market should prices show signs of reacting sharply. In fact, the Government may wish to keep British Funds around current levels until the General Election. Early in January an official statement is expected showing moderate improvement in Britain's gold and dollar reserves; but this cannot be maintained without expansion in export trade to the dollar countries.

Activity in foreign rails has again been apparent. La Guaira and also Bolivar stocks were prominent on talk of a statement early in the New Year regarding the take-over discussions, which were recently resumed. La Guaira ordinary stock has further advanced from 28 to 38 at the time of going to press, while the 5 per cent. debentures jumped from 68 to 80. Moreover, Bolivar "A" debentures also recorded another substantial advance on the week, from 53 to 70, while the "C" debentures have risen from 28 to 42. These big gains attracted a good deal of profit-taking; but fresh buyers appeared, although, if take-over discussions failed, prices of all these stocks would fall heavily.

Leopoldina stocks remained an uncertain market, buyers holding off because of fears of some months' delay before ratification of the sale agreement. There have been further declines of up to one point in the debentures, although very little selling was in evidence. Leopoldina ordinary was 8½, the preference 24½, the 4 per cent. debentures 85½ and

the 6½ per cent. debentures 124. Leopoldina Terminal 5 per cent. debentures were 96, and the ordinary units 2s. 6d. Great Western of Brazil remained at 61, and San Paulo 10s. units were 15s. 3d. There was some selling of United of Havana stocks, awaiting a further statement from the directors; the 1906 debentures came back to 26. Manila stocks were also sold, the "A" debentures falling to 77, while the preference shares at 6s. 6d. were lower, speculators having been transferring into the now active La Guaira and Bolivar stocks. There has been more business in Antofagasta ordinary and preference, which improved to 8 and 49½ respectively. Nitrate Rails were 76s. 3d. International Railways of Central America 5 per cent. first mortgage bonds have marked 165. Canadian Pacific were around 27½, and White Pass Yukon 6 per cent. debentures have been active up to 65½.

Road transport companies' shares in general remained steady, with Southdown at 122s. 6d., West Riding 68s., and Lancashire Transport 81s. B.E.L. deferred stock was quoted at £495 "ex" the capital bonus.

Iron and steels have been firm on the City view that nationalisation may never happen; moreover, in the event of nationalisation, most shares should be worth their "take-over" levels, and current market prices are still well below the latter. Dorman Long eased on the decision not to allow the company to segregate its bridge-building and constructional engineering sections; but later, the shares firmed up to 31s. 9d. in sympathy with the better trend in the iron and steel section. South Durhams were 31s. 6d. Elsewhere, Guest Keen at 42s., Babcock & Wilcox at 60s. 9d., and T. W. Ward at 56s., also moved in favour of holders.

Among shares of locomotive builders and engineers firmness ruled. Vulcans were 18s. 4½d., Beyer Peacock 19s. 4½d., North British Locomotive 19s. 6d., and Wagon Repairs 17s. 6d. Gloucester Wagon attracted buyers and moved up to 51s. 3d.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date			
				Total this year	Inc. or dec. compared with 1947-48		Total	Increase or decrease		
							1948/49			
South & Central America	Antofagasta...	811	11.12.49	£ 56,010	—	£ 4,600	49	£ 3,319,110	+	£ 564,130
	Costa Rica ...	281	Sept., 1949	30,929	—	3,154	13	102,621	—	8,998
	Dorada ...	70	Oct., 1949	31,848	—	908	43	296,878	—	23,637
	Inter. Ctl. Amer.	794	Oct., 1949	8579,232	—	876,578	43	810,110,125	—	\$960,633
	La Guaira ...	22½	Nov., 1949	\$108,378	—	\$1,458	48	\$1,167,360	—	\$9,007
	Nitrate ...	382	15.12.49	19,983	—	5,619	50	443,971	—	143,897
	Paraguay Cent.	274	9.12.49	£169,039	—	7,42,124	23	£3,318,854	—	\$930,987
	Peru Corp.	1,050	Nov., 1949	\$6,493,300	—	\$2,623,001	22	\$27,009,758	—	\$8,615,128
	" (Bolivian Section)	66	Nov., 1949	Bs.11,211,000	—	Bs.1,920,270	22	Bs.52,157,164	—	Bs.8,295,289
	Salvador ...	100	Aug., 1949	c81,000	—	c1,000	9	c173,000	—	c8,000
Canada	Taltal ...	154	Nov., 1949	15,910	—	9,120	22	60,980	—	22,460
	United of Havana	1,301	11.6.49	\$231,311	—	\$14,746	49	\$13,733,928	—	\$4,659,951
	Canadian National†	23,473	Oct., 1949	15,116,000	—	514,000	43	136,964,000	—	3,152,000
	Canadian Pacific	17,037	Oct., 1949	11,084,000	—	400,000	43	100,323,000	—	3,643,000
Various	Barsi Light*	167	Nov., 1949	32,257	—	9,202	35	388,605	+	15,450
	Egyptian Delta ...	607	31.10.49	21,874	—	5,055	31	385,264	—	12,682
	Gold Coast ...	536	Oct., 1949	217,578	—	497	32	1,625,728	—	213,529
	Mid. of W. Australia	277	Oct., 1949	28,391	—	3,076	18	109,866	—	3,847
	Nigeria ...	1,900	Sept., 1949	485,713	+	73,445	25	2,703,823	—	86,332
	South Africa ...	13,347	26.11.49	1,489,097	—	62,984	34	51,017,453	—	4,907,536
	Victoria ...	4,744	Aug., 1949	1,220,311	—	155,378	9	—	—	—

* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at 83 to £1